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POLLUTION OF THE INTERSTATE WATERS OF THE HUDSON RIVER AND ITS TRIBUTARIES, NEW YORK AND NEW JERSEY. PROCEEDINGS OF CONFERENCE SESSION (3RD) HELD AT NEW YORK, NEW YORK ON JUNE 18-19, 1969. RECONVENDED AT NEWARK, NEW JERSEY ON NOVEMBER 25, 1969

Federal Water Pollution Control Administration
Washington, D.C.

25 November 1969

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THIRD SESSION

CONFERENCE ON POLLUTION
of the
HUDSON RIVER AND ITS TRIBUTARIES
(NEW YORK - NEW JERSEY)

at the
GEORGIAN ROOM
ROBERT TREAT HOTEL
Newark, New Jersey

Reconvened
November 25, 1969

9:50 a.m.

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HUDSON RIVER AND ITS TRIBUTARIES

(NEW YORK - NEW JERSEY)

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GEORGIAN ROOM

ROBERT TREAT HOTEL

Newark; New Jersey

Reconvened

November 25, 1969

9:50 a.m.

PRESIDING:

Mr. Murray Stein, Assistant Commissioner for Enforcement, Federal Water Pollution Control Administration, Department of the Interior

CONFEREES:

Lester M. Klashman, Regional Director, Northeast Region, Federal Water Pollution Control Administration, Boston, Massachusetts

Richard J. Sullivan, Director, Division of Clean Air and Water, New Jersey State Health Department, Trenton, New Jersey

CONFEREES (Continued):

Thomas R. Glenn, Jr., Director, Chief Engineer, Interstate Sanitation Commission, 10 Columbus Circle, New York, New York

Dwight F. Metzler, Deputy Commissioner, New York State Department of Health, 84 Holland Avenue, Albany, New York

PARTICIPANTS:

Albert W. Bromberg, Chief, Operations Branch, Hudson-Delaware Basins Office, Federal Water Pollution Control Administration, Edison, New Jersey

Richard J. Sullivan, Director, Division of Clean Air and Water, New Jersey State Health Department, Trenton, New Jersey

Theodore A. Schwartz, Deputy Attorney General, New Jersey Department of Health, Trenton, New Jersey

Seymour A. Lubetkin, Chief Engineer, Passaic Valley Sewerage Commissioners, Newark, New Jersey

Paul W. Schrodt, Ironbound Children's Center, Newark, New Jersey

Joseph B. Calise, Production Manager, Benjamin Moore & Co., New York, New York

Stephen Brown, Director on Environmental Service, Tenneco Chemicals, New York, New York

Thomas R. Glenn, Jr., Director and Chief Engineer, Interstate Sanitation Commission, New York, New York

PARTICIPANTS (Continued):

Dwight F. Metzler, Deputy Commissioner, New York State Health Department, 84 Holland Avenue, Albany, New York

THOSE IN ATTENDANCE:

Richard W. Akeley, State Conservationist, SCS, USDA, Somerset, New Jersey

Robert J. Baker, Technical Director, Wallace & Tiernan, Belleville, New Jersey

R. G. Barrett, Lubrication Engineer, Curtiss-Wright, Wood-Ridge, New Jersey

Charles F. Bien, Manager, Environmental Engineering, GAF Corporation, Linden, New Jersey

Russell Bingham, River Inspector, Passaic Valley Sewerage Commissioners, Newark, New Jersey

Monty Blundon, Vice President, Zurn Environmental Engineers, Washington, D. C.

A. Borister, Plant Supervisor, Revere Smelting & Refining Company, Newark, New Jersey

John J. Brady, River Inspector, Passaic Valley Sewerage Commissioners, Newark, New Jersey

Francis T. Brezenski, Microbiologist, Hudson-Delaware Basins Office, Federal Water Pollution Control Administration, Edison, New Jersey

Francis J. Browning, Manager, Environmental Engineering Services, Burns & Roe, Inc., Oradell, New Jersey

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THOSE IN ATTENDANCE (Continued):

Reeder Butterfield, Plant Engineer, Metasol-Merck, Hawthorne, New Jersey

J. H. Canaan, Plant Manager, Monsanto Company, Kearny, New Jersey

Dr. L. Carmine

W. D. Coble, Term. Manager, Celanese, Newark, New Jersey

Ralph L. Comstock, Director of Environmental Health, Pitt-Consol Chemical, Newark, New Jersey

Peter Contuzzi, Assistant Director, Mechanical Contractors Association, East Orange, New Jersey

Thomas Costello, Passaic Valley Sewerage Commissioners, Passaic, New Jersey

James Crane, New Jersey Clean Water Council, Toms River, New Jersey

Louis Cuccinello, Inspector, Passaic Valley Sewerage Commissioners, Newark, New Jersey

Dominic F. Cundari, Chief Chemist, Public Service Electric & Gas Company, Newark, New Jersey

Eugene M. Danilchick, Civil Engineer, Military Ocean Terminal, Bayonne, New Jersey

Arnold H. Dater, Manager, Government Liaison, Witco Chemical Corporation, Oakland, New Jersey

Stanley R. Davis, Regional Hydraulic Engineer, U. S. Federal Highway Administration, Delmar, New Jersey

THOSE IN ATTENDANCE (Continued):

Joseph DeMartino, Executive Director, Jersey City Sewerage Authority, Jersey City, New Jersey

Esta Diamond, Director, Ironbound Children's Center, Newark, New Jersey

Caroline DiLorenzo, River Inspector, Passaic Valley Sewerage Commissioners, Paterson, New Jersey

William M. Dunne, Sanitary Engineer, U. S. Military Academy, West Point, New York

Paul Eastman, Assistant Commissioner, New York State Health Department, Albany, New York

James J. Egan, Jr., Vice President, Chelsea Title & Guaranty Company, Newark, New Jersey

Francis A. Fahy, Counsel, Jersey City Sewerage Authority, Jersey City, New Jersey

C. E. Feigley, Engineer, Diamond-Shamrock Corporation, Newark, New Jersey

Richard Field, Special Assistant for Environmental Engineering, U. S. Navy Department, Eastern Division, Naval Facilities Engr. Command, New York, New York

Richard [illegible], Ensign, U. S. Coast Guard, Governors Island, New York

E. V. Fitzpatrick, Deputy Director, Hudson-Delaware Basins Office, Federal Water Pollution Control Administration, Edison, N.J.

Arthur E. Gardner, Senior Plant Engineer, Western Electric Company, Kearny, New Jersey

Edward V. Geismar, Director, Philadelphia Field Office, Federal Water Pollution Control Administration, Philadelphia, Pennsylvania

THOSE IN ATTENDANCE (Continued):

Dorothy Gill, Ironbound Children's Day Center, Newark, New Jersey

Reuben Goldstein, River Inspector, Passaic Valley Sewerage Commissioners, Newark, New Jersey

James M. Gordon, Bridge Engineer, Federal Highway Administration, Bureau of Public Roads, Trenton, New Jersey

J. A. Gouck, Specialist-Air and Water, Allied Chemical Corporation, Morristown, New Jersey

A. L. Gregoric, Environmental Control, Diamond Shamrock Corporation, Newark, New Jersey

Samuel Haber, Inspector-Air Pollution, City of Newark, Newark, New Jersey

H. Heukelekian, Director of Research, Elson T. Killam Assoc., Millburn, New Jersey

Roger H. Higgons, Assistant to Technical Director, Benjamin Moore Company, Newark, New Jersey

Joseph Hintz, Water Pollution Office, COTP, United States Coast Guard, Governors Island, New York

Christian T. Hoffman, Jr., Sup. Public Health Engineer, New Jersey Department of Health, Trenton, New Jersey

Terry D. Hunt, Technical Manager, Celanese Chemical Company, Newark, New Jersey

William W. Jones, Sr. Process Engineer, Vulcan Materials Company, Chemical Division, Newark, New Jersey

THOSE IN ATTENDANCE (Continued):

Francis A. Kalcher, Civil Engineer, Federal Power Commission, New York, New York

Harold M. Kandell, P.E. (Consultant, Celanese Chemical Company, Newark, New Jersey; Consultant, Charter Bulk Service, Newark, New Jersey; Consulting Engineer, Elizabeth, New Jersey)

Charles A. Kientz, Jr., Health Officer, Boro of North Arlington, North Arlington, New Jersey

Martin Lang, Assistant Commissioner, New York City Department of Water Resources, New York, New York

James Lavis, Industrial Division Rep., G. W. H. Corson, Inc., Plymouth Meeting, Pennsylvania

G. A. Lehnert, Engineer, Benjamin Moore & Company, Newark, New Jersey

Major Robert S. Lindsay, Assistant Dist. Engr./Civil Works, U. S. Army Corps of Engineers, New York, New York

Dr. Warren Litsky, Consultant to Federal Water Pollution Control Administration, University of Massachusetts, Amherst, Massachusetts

Vito W. Lordi, Sanitary Division Assistant, Passaic Valley Sewerage Commissioners, Newark, New Jersey

Albert Machlin, Assistant Director of Environmental Health Services, New York City Office, New York State Department of Health, New York, New York

THOSE IN ATTENDANCE (Continued):

Charles Maguire, Chief, Industrial Hygiene and Air Pollution Control, City of Newark, Newark, New Jersey

Charles A. Manganaro, Partner-Manganaro, Martin & Lincoln, New York, New York

Joseph S. M. Marfiak, Senior Engineer, John J. Kassner, Inc., New York, New York

John F. McDonald, Assistant General Attorney, Public Service Electric & Gas, Newark, New Jersey

John K. McLaughlin, River Inspector, Passaic Valley Sewerage Commissioners, Newark, New Jersey

Howard Meyers, Executive Director, Revere Smelting & Refining Corporation, Newark, New Jersey

Charles F. Miles, Jr., Assoc. Sanitary Engineer, New York State Department of Health, New York, New York

Lawrence J. Miloscia, Plant Engineer, Western Electric, New York, New York

Joseph Monkoski, Civil Engineer, National Park Service, Philadelphia, Pennsylvania

John J. Murphy, Assistant District Chief, United States Geological Survey, Trenton, New Jersey

Irwin Novick, Chief, Federal/State Aid, Department of Water Resources, New York City, New York

Charles R. O'Connor, Hydraulic Engineer, County of Bergen, Hackensack, New Jersey

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THOSE IN ATTENDANCE (Continued):

Herbert R. Pahren, Director, Technical Program, Northeast Region, Federal Water Pollution Control Administration, Boston, Massachusetts

William Palmer, Public Information Specialist, Hudson-Delaware Basins Office, Federal Water Pollution Control Administration, Edison, New Jersey

F. L. Paul, Plant Manager, Ashland Chemical, Newark, New Jersey

John Perrapato, River Inspector, Passaic Valley Sewerage Commissioners, Garfield, New Jersey

Ralph Porges, Head, Water Quality Branch, Delaware River Basin Commission, Trenton, New Jersey

Leonard Ratushewitz, Chief, River Basin Section, New York District Corps of Engineers, New York, New York

J. Resnick, Environmental Engineering Spec., Monsanto, New York, New York

R. E. Richard, Manager, R&D, Essex Chemical Corporation, Clifton, New Jersey

Robert J. Richmond, Planner III, Tri-State Transportation Commission, New York, New York

A. E. Ritchie, Chairman of Beleaguered Earth, AAUW, Summit, New Jersey

B. P. Robinson, P.E., Chief, Engineering Bureau, United States Department of Housing and Urban Development, New York, New York

THOSE IN ATTENDANCE (Continued):

Theodore Rogowski, Assistant Solicitor-Water Pollution Control, United States Department of the Interior, Washington, D. C.

Joan Rohlfs, Associate Research Director, Greater Newark Chamber of Commerce, Newark, New Jersey

F. J. Rooney, League of Women Voters, State Water Chairman, Montclair, New Jersey

Captain D. E. Rushford, Chief, New York Field Office, United States Coast and Geodetic Survey, New York, New York

Clifford B. Ross, Public Relations, New Jersey Department of Health, Trenton, New Jersey

Edward L. Sayre, Associate Engineer, Capen-Rigo Assoc., Oldwick, New Jersey

Dorothy Silva, Ironbound Children's Center, Newark, New Jersey

Arthur Slomine, Public Work Rep., Roy F. Weston, West Chester, Pennsylvania

Arnold Smith, Partner, Nebolsine, Toth, McPhee Assoc., Fort Lee, New Jersey

J. K. Smith, Chemist, Witco Chemical Corporation, Newark, New Jersey

Robert C. Sobeck, Supt., Jersey City Sewerage Authority, Jersey City, New Jersey

Jerry Strumpf, Plant Manager, Essex Chemical Corporation, Newark, New Jersey

THOSE IN ATTENDANCE (Continued):

James J. Sutton, Chief of Engineering Branch, Military Ocean Terminal, Bayonne, New Jersey

Lester A. Sutton, Construction Program Director, Northeast Region, Federal Water Pollution Control Administration, Boston, Massachusetts

Louis Tateo, River Inspector, Passaic Valley Sewerage Commissioners, Newark, New Jersey

Edward F. ten Broeke, Chief of Public Affairs, Western Electric Company, Kearny, New Jersey

Paul B. Thomasset, (Reporting to Sierra Club, New York City, New York) (Vice President, Thomasset Colors, Newark, New Jersey.)

Mayor John Trommelen, Prospect Park, New Jersey

Arnold S. Vernick, Senior Sanitary Engineer, Burns & Roe, Inc., Oradell, New Jersey

R. Wagner, Manager of Operations, Essex Chemical, Clifton, New Jersey

K. H. Walker, Director, Hudson-Delaware Basins Office, Federal Water Pollution Control Administration, Edison, New Jersey

Dr. Leon W. Weinberger, Vice President, Zurn Environmental Engineering, Washington, D. C.

Mitchel Wendel, Interstate Sanitation Commission, New York, New York

THOSE IN ATTENDANCE (Continued):

C. H. Wentworth, LCDR., District Sanitary Engineer, Third Coast Guard District, United States Coast Guard, Governors Island, New York

Donald Widdows, Chief Chemist, Monsanto Chemical Company, Kearny, New Jersey

David E. Williamson, Project Manager, Resource Engineering Assoc., Wilton, Connecticut

Derek T. Winans, Business Manager, Ironbound Children's Center, Newark, New Jersey

Louis A. Winkelman, Manager-Plant Engineering, Public Service Electric & Gas Company, Newark, New Jersey

Elwood V. Winters, Prin. Eng., Bureau of Sewers, City of Newark, Newark, New Jersey

PRESS REPRESENTATIVES

Mary C. Ansbro, Editor, Water in the News, Soap & Detergent Assoc., New York, New York

David Bird, Reporter, New York Times, New York, New York

Bruce Chadwick, Reporter, New York Daily News, New York, New York

Thomas M. Donoghoe, Associate Editor, Air & Water News, New York, New York

Fred Hillmann, Star-Ledger, Newark, New Jersey

Gary Hollander, Advertising Manager, Rutgers Observer, Wayne, New Jersey

Marion J. Klawonn, Associate Editor, Engineering News Record, New York, New York

Dick Levitan, Investigative Reporter, WINS, New York, New York

Frank L. Lombardi, Reporter, The Morning Call, Paterson, New Jersey

Kathleen Moloney, Reporter, Jersey Journal, Jersey City, New Jersey

John Needham, Reporter, UPI, Newark, New Jersey

Carl Ray, Commentator, NBC, New York, New York (Called in)

J. Ridgeway, Editor, Hard Times - New Republic, Washington, D. C.

Carolyn Spatucci, Reporter, Rutgers Observer, Rutgers University, Newark, New Jersey

Barbara Spector, Maritime Writer, Newark News, Newark, New Jersey

Dan Weissman, Reporter, The Herald News, Passaic, New Jersey

Carl Zeictz, News Desk, Associated Press, Newark, New Jersey

PROCEEDINGS

MR. STEIN: The conference is open.

This session of the conference in the matter of pollution of the interstate waters of the Hudson River and its tributaries in the States of New York and New Jersey is being held under the provisions of Section 10 of the Federal Water Pollution Control Act, as amended. Under the provisions of the Act, the Secretary of the Interior is authorized to initiate a conference of this type when requested to do so by a governor of a State and when on the basis of reports, surveys, or studies, he has reason to believe that pollution subject to abatement under the Federal Act is occurring.

In 1965, in accordance with requests from Nelson A. Rockefeller, Governor of New York, and Richard J. Hughes, Governor of New Jersey, and on the basis of reports, surveys or studies, the first session of this conference was initiated. It was held in New York on September 28-30, 1965. The second session of the conference was held on September 20, 1967, and the third session was held on June 18-19, 1969, and this will consequently be the fourth session of the conference.

Both the State and Federal goverments have responsibilities in dealing with water pollution control problems. The

M. Stein

Federal Water Pollution Control Act declares that the States have primary rights and responsibilities for taking action to abate and control pollution. Consistent with this, we are charged by law to encourage the States in these activities.

At the same time, the Secretary of the Interior is charged by law with specific responsibilities in the field of water pollution control in connection with pollution of interstate and navigable waters. The Federal Water Pollution Control Act provides that pollution of interstate or navigable waters which endangers the health or welfare of any persons shall be subject to abatement. This applies whether the matter causing or contributing to the pollution is discharged directly into such waters or reaches such waters after discharge into a tributary.

The purpose of the conference is to bring together the State and interstate water pollution control agencies, representatives of the United States Department of the Interior, and other interested parties to review the existing situation, and the progress which has been made, to lay a basis for future action by all parties concerned, and to give the States, localities and industries an opportunity to take any indicated remedial action under State and local law.

This series of conferences on the Hudson River has resulted in a remedial program for an abatement of the pollution of the river and its tributaries which has been unanimously agreed to by the States of New Jersey, New York, the Interstate Sanitation Commission and the Department of the Interior.

We have moved forward with the program in establishing requirements specifically analyzing in case to case what has to be done, point by point, in dealing with the discharges, determining the specific type of treatment which has to be given in order to protect the waters and establishing a time schedule for this work.

The bulk of the work as indicated under the Federal law has been done by the States involved and the Interstate agency. There have been very, very active programs in this area, and I think we have one of the largest pollution clean-ups under way in the Hudson River going on right now all the way from Albany down to the bay.

Today we are here to concentrate on the New Jersey side, in the Passaic Valley area, to determine what the progress is in the area and what needs to be done.

We have many invitees to the conference, but this is a conference between State and Federal representatives. The State representatives are: Mr. Dwight Metzler, who represents the New York State Department of Health; the New Jersey State Department of Health is represented by Mr. Richard

Sullivan; the Interstate Sanitation Commission is represented by Mr. Thomas Glenn; and the Federal conferee is Mr. Lester Klashman, who is Regional Director for the Federal Water Pollution Control Administration responsible for this region.

My name is Murray Stein. I am from headquarters of the Interior Department in Washington, and the representative of Secretary Hickel.

Now, anyone else wishing to participate in the conference who has not already done so should make his views known to Mrs. Piere, our National Conference and Hearing Coordinator. Mrs. Piere, will you stand up so they can see you?

(Mrs. Piere arose.)

Before the first recess, you should have either registered your intent to speak, or you should register with Mrs. Piere.

The procedure will be as follows: We will call upon the conferees to make statements and then we will ask for all the invitees or the people who have registered and indicated that they wished to make statements. At the conclusion of each statement, we will give the conferees an opportunity to ask questions or make comments. At the conclusion of all the statements, we may have a general discussion, then an executive session, and then the conferees will make an announcement.

This has proved to be a useful technique in the past in getting all the issues outlined with particularity, indicating what progress has been made, and what future action we must bring in order to achieve our objectives.

A summary of the conference will be made available to the State agencies for distribution, and if you wish that, you should get in touch with the State. In addition, in about three or four months we will have a printed copy of the transcript available for distribution, again through the State agencies. If you wish a copy of that, you should get in touch with your State agency to get a copy of it.

The transcript will be in black and white, so anyone making a presentation should try to avoid referring to a color, such as "red" or "green" on a chart.

We would also suggest that anyone other than the conferees at the head table making a statement come up to the lectern and identify himself as to name and affiliation.

With that, we will call on the Federal conferee, Mr. Lester Klashman.

Mr. Klashman.

MR. KLASHMAN: For the Federal presentation I would like to call on Mr. Al Bromberg.

Mr. Bromberg.

STATEMENT OF
MR. ALBERT W. BROMBERG,
CHIEF, OPERATIONS BRANCH,
HUDSON-DELAWARE BASINS OFFICE,
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
EDISON, NEW JERSEY

MR. BROMBERG: Mr. Chairman, Conferees:

My name is Albert Bromberg. I am Chief of Operations at the Hudson-Delaware Basins Office of the Federal Water Pollution Control Administration. I would like to read to you portions of our Report on the Quality of the Interstate Waters of the Lower Passaic River: Upper and Lower Bays of New York Harbor. However, I request that the entire contents of this report be entered into the record as if read.

MR. STEIN: Without objection, this will be done.

By the way, if anyone wants a transcript of the conference before the publication date, which will be about three or four months, I suggest you get in touch with Mr. Al Zimmer, who is an independent contract reporter, and make your own arrangements with him for the transcript.

Mr. Bromberg.

MR. BROMBERG: The Passaic Valley Sewerage

A. W. Bromberg

Commissioners operate an extensive waste treatment facility which collects and treats the waste from approximately 1,200,000 persons in 29 municipalities and over 700 industries located within the four New Jersey counties of Bergen, Essex, Hudson and Passaic. The system consists of two intercepting sewers, the Main Interceptor and South Newark Interceptor treatment facilities, including screens, grit chambers, pumps, sedimentation basins and sludge handling and storage, and outfall conduits and dispersal field with discharge of the effluent off Robbins Reef in the Upper Bay of New York Harbor. The major portion of these facilities was constructed and put into operation in 1924 and very little material change has been made since then.

INTRODUCTION

Section 10 of the Federal Water Pollution Control Act, as amended, authorizes the Secretary of the Interior to call a conference on the pollution of interstate waters if requested to do so by the Governor of a State, or when, on the basis of reports, surveys, or studies, the Secretary has reason to believe that pollution of interstate or navigable waters is endangering the health or welfare of persons in a State other than that in which the discharge or discharges originate.

The first session of the Hudson River Conference was held in September 1965, at the request of the Governors of New York and New Jersey, and on the basis of reports, surveys, or studies. This conference brought together interested Federal, State, interstate and local agencies to discuss the pollution problems of the interstate waters of the Hudson River and the New York metropolitan area.

During the conference, the New Jersey conferee delivered a statement from the Passaic Valley Sewerage Commissioners. The statement dealt with the area and population serviced by the Commissioners and the policing duties performed in connection with water pollution control regulation of the Passaic River and its tributaries below Great Falls. The Commissioners reported that through their efforts, pollution emanating within their jurisdiction had been effectively controlled. Some of the problems faced by the Passaic Valley Sewerage Commissioners' primary treatment plant were presented as well as the actions planned for correcting them.

The second session of the Hudson River Conference was convened in September 1967, to review compliance with initial conference recommendations and to discuss new problems. The New Jersey conferee reported on recent legal actions taken against polluters with particular reference to the State's injunctive proceeding to require the Passaic Valley Sewerage Commissioners to comply with the requirement for post-chlorination.

A third session of the conference was held in June 1969. The conferees reviewed progress of pollution abatement programs established by the States of New York and New Jersey and the Interstate Sanitation Commission. Special attention was focused on the significance of combined sewer overflows in the conference area.

A report on an inspection of the Passaic Valley Sewerage Commissioners' waste treatment facility conducted in June 1969 was presented by the Federal Water Pollution Control Administration. This report indicated that to improve the effectiveness of treating the average flow into the plant, all existing sedimentation basins should be in operation. At the time of the inspection, 20 of the 60 basins were out of operation. It appeared that routine maintenance of the operating basins was not adequate to insure their proper operation. Additional statements were also made regarding the number of direct discharges into the Passaic River and the resulting degradation of water quality.

The State of New Jersey reported that all governmental agencies within the conference area, except Passaic Valley Sewerage Commissioners, had complied with directives to provide effective post-chlorination of the effluent every year during the period of May 15 to September 15. The New Jersey conferee further stated that court actions had been initiated against the Passaic Valley Sewerage Commissioners for: (a) failing to meet the requirement for chlorination, and (b) for not acting toward compliance of a previous order to provide adequate treatment as required by the approved standards.

Appendix A contains the conclusions and recommendations of these three conference sessions. The major conference recommendations require that,

> "... All wastes prior to discharge into the waters covered by the conference shall be treated to provide a minimum of 80 percent reduction of biochemical oxygen demand at all times. It is recognized that this will require a design for an average removal of 90 percent of biochemical oxygen demand. All the waters covered by the conference shall receive effective disinfection of the effluents as required to protect water uses..."

The conferees agreed that all remedial facilities be placed in operation by 1970 except the proposed North River facility, which cannot be completed and in operation until 1972.

Subsequent to the third session, the Federal Water Pollution Control Administration conducted additional studies to evaluate the operational efficiency of the Passaic Valley Sewerage Commissioners' waste treatment facility and the effect of its effluent on the quality of the interstate waters of Upper and Lower Bays of New York Harbor. Surveys were also initiated along the Passaic River to identify the direct discharges to the river and define the quality of water resulting from these discharges. Similar studies had been carried out in May 1967 at the Passaic Valley Sewerage Commissioners' treatment facilities and in August 1968 along the Passaic River. This report has been prepared to present the results of these studies and to recommend improvements to the Passaic Valley Sewerage Commissioners' waste treatment facilities.

DESCRIPTION OF THE PASSAIC RIVER BASIN

The Passaic River Basin, situated in northeastern New Jersey and southeastern New York, drains an area of approximately 935 square miles. It spans across eight counties in New Jersey (Bergen, Essex, Hudson, Morris, Passaic, Somerset, Sussex and Union) and two counties in southeastern New York (Rockland and Orange).

The headwaters of the Passaic River are located north of Millington, New Jersey. From Millington, the river flows northeast for about 32 miles to the Great Piece Meadows above Caldwell, New Jersey, and continues east for 16 miles to Great Falls near Paterson, New Jersey. At Paterson, the river turns due south for 24 miles to its confluence with Newark Bay. The last 17 miles of the Passaic River from Dundee Dam to Newark Bay are tidal.

The basin can be divided into three distinctly separate physiographical regions: The Highland Area in the northwest part of the basin, comprising about 55 percent of the total watershed area; the Central Basin, located in the southerly portion of the watershed and representing a little over 25 percent of the total area; and the Lower Valley, comprising only about 20 percent of the watershed area and located in the eastern fringe of the basin.

The highland area is characterized by broad ridges and narrow valleys with terrain that is rugged and wooded. It contains many natural and man-made lakes. The area is sparsely settled and supports minor industrial activity.

The central basin consists of small hills, flat meadows and extensive areas of fresh water swamps. The major part of this basin is rapidly undergoing residential and commercial development.

The lower valley is similar in physiographic characteristics to the central basin. It is essentially a flat, wide, flood plain with abutting low rolling hillsides. The area is densely populated and contains some of the most highly developed land in New Jersey. Extensive industrial activities are concentrated in the valley.

The population of the basin in 1968 totaled about 2,000,000 persons, the majority of which are located in the highly urbanized lower valley. Population densities varied from a low of about 130 persons per square mile in Sussex County to a high of 7,140 persons per square mile in Essex County.

At least 155 municipal and 23 industrial facilities discharge treated wastewaters into the Passaic River Basin. The majority of the municipal facilities, all generally located in the highland and central basin areas, provide secondary treatment with chlorination to a total flow of approximately 50 mgd. The Passaic Valley Sewerage Commissioners operate the largest wastewater collection and treatment facility in the basin, which handles the domestic and industrial wastes primarily within the lower valley. This plant, serving 1,200,000 people, nearly three-fifths of the total sewered population in the basin, discharges primarily treated effluent without disinfection into the interstate waters of Upper Bay of New York

Harbor.

The mainstem of the Passaic River below the confluence with the Pompton River is considered interstate water under Section 10 of the Federal Water Pollution Control Act, as amended. The classifications established for these interstate waters are given below. Detailed definitions of these classes and their criteria are provided in Appendix B.

Water	Classification	Highest Use
Newark Bay	TW-3	Navigation not recreation
Passaic River (mainstem from mouth to head of tide at Dundee Lake Dam)	TW-3	Navigation not recreation
Passaic River (mainstem and tributaries between Dundee Lake Dam and Little Falls)	FW-3	All recreational purposes but not for public potable water supply
Passaic River (mainstem between Little Falls and its confluence with the Pompton River)	FW-2	Public potable water supply after treatment and all recreational purposes

A. W. Bromberg

PASSAIC VALLEY SEWERAGE COMMISSIONERS

Background

The Passaic Valley Sewerage Commissioners were established by three acts of the New Jersey Legislature: 1. New Jersey Public Law 1902, Chapter 48, which outlined the boundaries of the Passaic Valley Sewerage District to include almost the entire watershed of the Passaic River; 2. New Jersey Public Law 1907, Chapter 10, which provided for the purification of the waters of the Passaic River within the District from any polluting matter, made provision for the treatment of sewage, and authorized the Commissioners to sell bonds, if necessary, to raise funds for the construction of sewage treatment facilities; and 3. New Jersey Public Law 1907 New Jersey Statutes Annotated (NJSA) 58:14-1 to 14-34 (1907) which created an authority to coordinate the planning and financing of sewage disposal and water pollution control within the Passaic Valley Sewerage District and authorized participating municipalities, through the sale of bonds or borrowing of money, to raise funds needed to pay the Commissioners' charges and/or the cost of constructing connecting sewer lines.

The Governor of the State of New Jersey appoints the five commissioners of the Passaic Valley Sewerage Commissioners, who each serve a five-year term in office. Appointments are made so that, as far as practicable, each section of the District is represented.

A 1910 stipulation between the Federal Government, represented by the Secretary of War, and the Passaic Valley Sewerage Commissioners, outlined requirements and results which the Passaic Valley Sewerage Commissioners had to meet in the construction and operating of its treatment facilities. Among the conditions of the stipulation were:

> "1. There will be absence in the New York Bay of visible particles coming from the Passaic Valley sewage;
>
> "2. there will be absence of deposits objectionable to the Secretary of War of the United States in the New York Bay coming from the Passaic Valley sewage;
>
> "3. there will be absence in the New York Bay and its vicinity of odors due to the putrefaction of organic matters contained in the Passaic Valley sewage thus discharged;
>
> "4. there will be a practical absence on the surface of New York Bay of any grease or color due

> "to the discharge of the Passaic Valley sewage at the dispersion area or elsewhere;
>
> "5. there will be no injury to the public health which will be occasioned by the discharge from the said sewer into the Bay of New York in the manner proposed and no public or private nuisance will be created thereby;
>
> "6. there will be absence of injurious effect from said sewage discharge, upon the property of the United States situated in the Harbor of New York; and
>
> "7. there will be absence of reduction in the dissolved oxygen contents of the waters of New York Bay resulting from the discharge of Passaic Valley sewage, to such an extent as to interfere with major fish life...."

The original Passaic Valley Sewerage Commissioners' contract with municipalities within the District was dated May 15, 1911. This contract was revised on September 20, 1911, and was signed by 15 participating municipalities. The contract:

1. Determined the specifications for construction of the Passaic Valley Sewerage Commissioners intercepting sewer or sewers, the treatment plant and a suitable

discharge point;

2. estimated the probable cost for construction, operation, and maintenance;

3. authorized expenditures by the Commissioners of $11,250,000 for the construction of sewers, plant and disposal facilities;

4. authorized the contracting municipalities to sell bonds;

5. provided for obtaining the necessary property rights to construct a sewer system and treatment plant;

6. stated that the Passaic Valley Sewerage Commissioners shall without restriction exercise the powers granted to them under the provisions of State law; and

7. established a method for determining municipal costs for sewage treatment based on estimated flow and sewer line capacity.

Subsequent contracts, between 1911 and 1925, authorized increased funds for the construction of the Passaic Valley Sewerage Commissioners' sewer lines and treatment plant. Municipal shares of construction costs and interest rates were to be apportioned according to original contract provisions. The last two contracts, between Passaic Valley Sewerage

Commissioners and participating municipalities, dated October 1926 and October 1942, outlined the procedures that a municipality must follow to receive the benefits of increased capacity of the Commissioners' system.

As of January 1925, 20 municipalities were under contract with the Passaic Valley Sewerage Commissioners. Over the course of time, other municipalities in the four-county area (Bergen, Essex, Hudson, Passaic) of northern New Jersey contracted for sewage treatment, bringing the number of municipalities totally or partially served to 29. Table 1 identifies these municipalities and Figure 1 outlines the service area. Out of the eight municipalities partially served by the Passaic Valley Sewerage Commissioners system, two (Glen Rock, Fairlawn) discharge the remainder of their waste as treated effluent into tributary waters of the Passaic River. The remaining six municipalities (Lyndhurst, North Arlington, Rutherford, Kearny, East Orange, and Newark) discharge the remainder of their waste as treated effluent outside the Passaic River Basin.

An important provision of the operation of the Commissioners' system allows the leasing of sewage capacity to any new participant if this does not conflict with the original flow and capacity allotted to the contracting municipalities. However, the Commissioners cannot lease such sewage capacity

TABLE 1

MUNICIPALITIES SERVED BY THE PASSAIC VALLEY SEWERAGE COMMISSIONERS

Bergen County

East Rutherford (Discharge #1)
Garfield
Lyndhurst (70%)
North Arlington (76%)
Rutherford (54%)
Wallington
Glen Rock (Partial)
Fairlawn (Partial)
East Paterson
Lodi
Saddle Brook Twp.

Hudson County

East Newark
Harrison
Kearny (Partial)

Essex County

Belleville
Bloomfield
East Orange (Partial)
Glen Ridge
Montclair
Newark (72%) (Discharge #2)
South Newark
Nutley
Orange

Passaic County

Clifton
Haledon
Passaic
Paterson
Prospect Park
Hawthorne

Note: Percentages in parenthesis indicate portion of municipality served by PVSC.

Source: PVSC Report on Proposed Head End Facilities, December 1968.

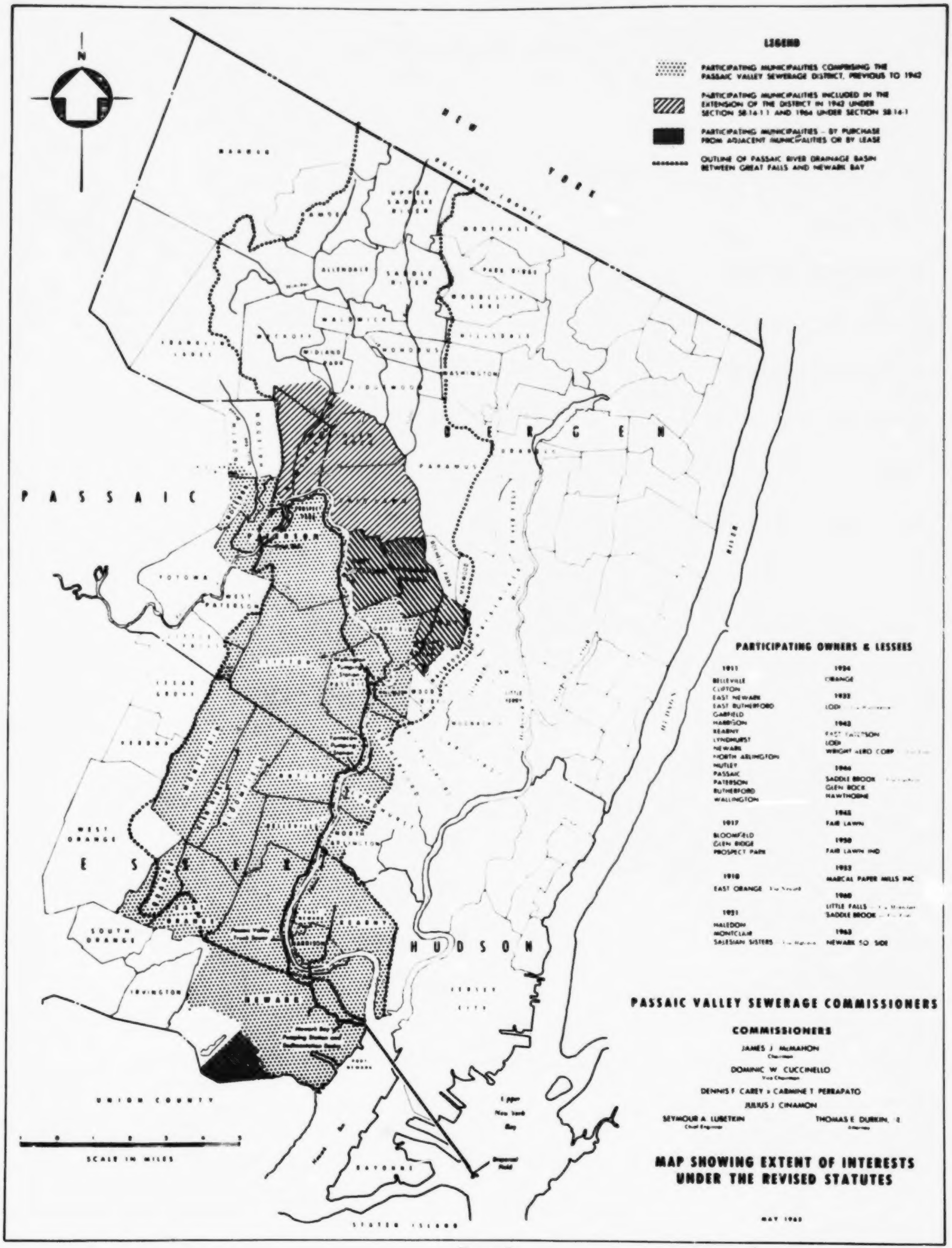

N
LEGEND
PARTICIPATING MUNICIPALITIES COMPRISING THE PASSAIC VALLEY SEWERAGE DISTRICT, PREVIOUS TO 1942
PARTICIPATING MUNICIPALITIES INCLUDED IN THE EXTENSION OF THE DISTRICT IN 1942 UNDER SECTION 58:16-11 AND 1964 UNDER SECTION 58:16-1
PARTICIPATING MUNICIPALITIES - BY PURCHASE FROM ADJACENT MUNICIPALITIES OR BY LEASE
OUTLINE OF PASSAIC RIVER DRAINAGE BASIN BETWEEN GREAT FALLS AND NEWARK BAY
NEW YORK
PASSAIC
BERGEN
ESSEX
HUDSON
UNION COUNTY
STATEN ISLAND
MAHWAH
ALLENDALE
SADDLE RIVER
UPPER SADDLE RIVER
MONTVALE
PARK RIDGE
WOODCLIFF LAKE
HILLSDALE
WALDWICK
WYCKOFF
FRANKLIN LAKES
MIDLAND PARK
HO-HO-KUS
WASHINGTON
RIDGEWOOD
PARAMUS
ORADELL
TOTOWA
WEST PATERSON
LITTLE FALLS
CEDAR GROVE
VERONA
WEST ORANGE
SOUTH ORANGE
IRVINGTON
MONTCLAIR
BLOOMFIELD
BELLEVILLE
NUTLEY
NORTH ARLINGTON
KEARNY
NEWARK
EAST NEWARK
JERSEY CITY
BAYONNE
LITTLE FERRY
RIVER
Upper New York Bay
SCALE IN MILES
PARTICIPATING OWNERS & LESSEES
1911
BELLEVILLE
CLIFTON
EAST NEWARK
EAST RUTHERFORD
GARFIELD
HARRISON
KEARNY
LYNDHURST
NEWARK
NORTH ARLINGTON
NUTLEY
PASSAIC
PATERSON
RUTHERFORD
WALLINGTON
1917
BLOOMFIELD
GLEN RIDGE
PROSPECT PARK
1918
EAST ORANGE
1921
HALEDON
MONTCLAIR
SALESIAN SISTERS
1924
ORANGE
1932
LODI
1942
EAST PATERSON
LODI
WRIGHT AERO CORP
1946
SADDLE BROOK
GLEN ROCK
HAWTHORNE
1948
FAIR LAWN
1950
FAIR LAWN IND
1953
MARCAL PAPER MILLS INC
1960
LITTLE FALLS
SADDLE BROOK
1963
NEWARK SO SIDE
PASSAIC VALLEY SEWERAGE COMMISSIONERS
COMMISSIONERS
JAMES J McMAHON
Chairman
DOMINIC W CUCCINELLO
Vice Chairman
DENNIS F CAREY • CARMINE T PERRAPATO
JULIUS J CINAMON
SEYMOUR A LUBETKIN
Chief Engineer
THOMAS E DURKIN, II
Attorney
MAP SHOWING EXTENT OF INTERESTS UNDER THE REVISED STATUTES
MAY 1963

Figure 1

if municipalities representing more than 75 percent of the allotted capacity object to such leasing of sewage capacity.

The Passaic Valley Sewerage Commissioners, under the requirements of the several acts of the New Jersey Legislature and the contracts with the municipalities of the District, are empowered to establish the annual costs for maintenance, repair and operation of their system. These costs are allocated to each of the participating municipalities, based on flow and capacity. Statements made at a previous conference session indicate that the charges assessed by the Passaic Valley Sewerage Commissioners to contracting municipalities are below those of sewerage authorities and municipalities providing similar services in the area.

Description of Waste Treatment Facilities

The Passaic Valley Sewerage Commissioners operate an extensive water pollution control system which collects and treats the wastes from approximately 1,200,000 persons in 29 municipalities and over 700 industries located within the four North Jersey counties of Bergen, Essex, Hudson and Passaic. The system consists of interceptor sewers, treatment facilities, outfall works and sludge handling facilities.

There have been a number of reports prepared by consultants to the Passaic Valley Sewerage Commissioners which evaluate and recommend measures required to improve the operation and effectiveness of the system. These reports include:

Consultant	Title of Report	Date
Bogert-Childs Engineering Associates	Report on Improving Sedimentation and Dispersal Facilities at Newark Bay Pumping Station	May 1951
Bogert-Childs Engineering Associates	Critical Situation as to Steam Power, Newark Bay Pumping Station	March 1952
Bogert-Childs Engineering Associates	Report on Repairs, Replacement and Improvements at Newark Bay Pumping Station	May 1954
Metcalf & Eddy Engineers	Reports on Improvements to Sewage Treatment Facilities at the Newark Bay Pumping Station	1960, 1962
Manganaro, Martin & Lincoln	Report on Proposed Chlorination Facilities	April 1967
Manganaro, Martin & Lincoln	Report on Proposed Head-End Facilities	December 1968

The implementation of the recommendations resulting from the above studies primarily included:

1. Expansion of pumping capacity;
2. Mechanization of sedimentation basins;
3. Improvement of sludge storage and processing facilities.

Recommendations regarding the installation of new grit and screening facilities which date back to 1954 have not been implemented although modifications to the existing equipment were made. These modifications, however, have not eliminated the problems at the treatment plant resulting from poor grit removal.

The installation of chlorination facilities as required by New Jersey State Order has not been implemented. This project is reported being delayed pending evaluation of new grit and screen facilities and the effect on chlorination facilities after secondary treatment has been provided.

Intercepting Sewers

Two intercepting sewers, the Main Interceptor and the South Newark Interceptor, collect and transport wastewater to the treatment facilities on Newark Bay in the vicinity of Port Newark (see Figure 1). The Main Interceptor, which originates within the City of Paterson below Great Falls and parallels the Passaic River for about 27 miles, receives the flow from most of the participating municipal sewer collection systems including the larger industries. Its diameter ranges from four feet at its origin to 13.5 feet at the Newark Bay Pumping Station. Several of the municipal collection systems receive excessive flow during storm periods since storm water and sanitary waste are all or partially combined. Considerable infiltration is also experienced since many of the separate sanitary collection facilities are old and subject to ground water seepage. Since the Main Interceptor was not originally designed to accommodate all flows during storm periods, about 50 bypasses were provided to discharge combined sewer overflows to the Passaic River. These bypasses are regulated by manually operated valves. In the past, maintenance crews, on 24-hour alert, were sent out to open the bypasses whenever flows were expected to exceed the safe pumping station operating load of 225 mgd. This operational practice, which was necessary to protect the Newark Pumping Station from flooding, often resulted in the opening of the bypasses during non-rainfall periods. For example, during the period January-September 1953, bypasses were open approximately 60 percent of the time. Pump replacement projects in 1953, 1954 and 1964 increased the maximum pumping capacity to 660 mgd. No data are available to indicate the present frequency of bypass to the Passaic River of raw sewage during periods of wet weather or high infiltration. Many of the participating municipal collection systems also have their own overflow bypasses which discharge untreated wastewater to the Passaic River during periods of rainfall and high infiltration.

In 1966, the South Newark Interceptor was installed. This interceptor collects the wastes from 100,000 people and several industries located in the South Newark area. This waste was previously discharged untreated to Petty Ditch near Newark Airport. In April 1969, a faulty valve at the pumping station made it necessary to discharge about 30 mgd of raw wastewater to Petty Ditch rather than into the interceptor line. This condition existed until October 1969, when temporary repairs were made.

Treatment Facilities

The Passaic Valley Sewerage Commissioners' waste treatment facility is located in Newark, New Jersey, adjacent to the New Jersey Turnpike Bridge over Newark Bay. Their primary treatment facilities consist of screens, grit chambers, pumps, sedimentation basins and sludge handling facilities.

The original screening facilities consisted of three sets of coarse bar screens located at the effluent end of the grit chamber and three sets of fine screens located in the screen house at the Main Pumping Station. These screens, which remove the larger particles of suspended and floating solids, were cleaned manually by raking and scraping the solids away into containers or trucks for final disposal. The study by Bogert-Childs Engineering Associates in 1954 recommended replacing the original facilities with mechanically cleaned coarse screens and hydraulically cleaned fine screens before and after four new grit chambers. This recommendation was not implemented but, in 1961, improvements to the screening facilities were made by the installation in each existing grit channel of bar screens with mechanically operated cleaning rakes. The study of December 1968 by Manganaro, Martin and Lincoln recommended that new screening facilities of adequate capacity be provided.

The existing grit chambers, which are the original facilities installed in 1924, consist of three channels each approximately 35 feet long, 16 feet wide and 44.5 feet deep, with overhead grit removal facilities. The study of 1954 found these facilities to be obsolete and ineffective, and indicated that large quantities of inorganic solids were being carried through the main pumping station to the sedimentation basins, causing numerous mechanical breakdowns. It was

A. W. Bromberg recommended that four new grit chambers equipped with mechanical grit collection facilities replace these obsolete facilities. Another study in 1960 by Metcalf & Eddy Engineers indicated that, based upon operating experience, grit removal was seldom a problem, although the unequal distribution of grit between the three channels during high flow conditions did result in carry-over of grit into the sedimentation basin. The study recommended certain improvements to the existing grit removal facilities along with new grit washing equipment. The study in 1968 again investigated the most effective means for removing and disposing of grit, screenings, grease and oil, and recommended new grit removal and screening facilities.

The original pumping facilities at the treatment plant consisted of four steam-driven centrifugal pumps rated at 100 mgd each. During the period 1953-1956, two of these units were replaced with electric-driven constant-speed centrifugal pumps, each with a rated capacity of 130 mgd. The two remaining pumps were replaced in December 1964 by two diesel-driven, variable-speed centrifugal pumps, each with 200 mgd maximum capacity. These facilities provide a pumping capacity of 660 mgd, which appear to be sufficient to handle the peak sewage flow into the plant. It should also eliminate the need for by-passing raw sewage directly into the Passaic River from the interceptors except during periods of intense stormwater run-off and infiltration. The pumping capacity exceeds the present treatment facilities design capacity of 225 mgd.

The Gate House, also known as the valve chamber or Venturi meter chamber, contains the control devices which divert flow into the effluent conduit leading to the sedimentation basins or to a bypass conduit leading directly to Newark Bay.

The 1954 report by Bogert-Childs Engineering Associates revealed that one of the Gate House sluice gates was inoperable and remained open serving as a constant drain of raw sewage through the bypass conduit to Newark Bay. It is not known what, if any, corrections or improvements have been made on these facilities. In addition, no information is available to indicate how extensively this bypass conduit is used.

MR. STEIN: While you are going on with this, rather than ask questions at the end, you state: "It is not known what, if any, corrections or improvements have been made on these facilities."

We would like to have you indicate why you don't know that.

MR. BROMBERG: Well, the extent of the --

MR. STEIN: I don't want to interrupt the report, but I think what we are doing is getting a lot of detail which, it seems to me, is very pertinent and might be covered by you here.

For example, if you have a report of some defect and the indication is that you have not gotten the answer, the question is, was this because we didn't ask, or the investigators didn't ask the question, or when you asked it you couldn't get a response?

MR. BROMBERG: We have not asked the Passaic Valley Sewerage Commissioners directly for an answer. However, it is my understanding that this information is not even available at the New Jersey State Health Department.

In other words, it hasn't been made available to them by the Passaic Valley Sewerage Commissioners.

I would defer that question to the State of New Jersey to see if maybe they do have the --

MR. STEIN: Okay, but I think you should indicate what the situation is as you go along with your report on all of these, because I think we should have our questions later on the substantive matter of the report.

I would hesitate going through the report and asking you time after time why you couldn't get some information. If you run into this kind of a thing, it might be helpful if you just would indicate what the situation is with regard to it.

MR. BROMBERG: Yes, sir.

MR. STEIN: Thank you.

MR. BROMBERG: The sedimentation basins, which are forty years old, are grouped into three units: Unit 1 has 24 tanks, each approximately 25 feet by 104 feet; Unit 2 has 20 tanks, each approximately 25 feet by 72 feet; Unit 3 has 16 tanks, each approximately 22 feet wide by 84 feet long. These basins are designed for a flow of 225 mgd. Mechanical sludge scrapers operate the length of each tank and cross collectors scrape collectors scrape collected sludge from groups of tanks into hoppers at the influent end. Sludge is withdrawn from the basins through automatic valves and two 20 inch cast iron sludge pipes to the sludge pumping station. During a Federal Water Pollution Control Administration inspection in June 1969, several of the automatic sludge valves were inoperative and were being manually controlled. The report on Proposed Head End Facilities, 1968, indicated that the overflow rates based on average annual flows for these sedimentation basins, exceed the nominal allowable rates established by the New Jersey State Department of Health Rules and Regulations for plants with secondary treatment. The report states that,

> "...To meet this accepted norm, more than a doubling of present basin area is required (in

A. W. Bromberg

"addition to secondary treatment)..."

Although some improvements have been made over the years, namely, the mechanization of the basins, performance has been plagued by operational problems which result in frequent shut-down of these basins for repair. Major difficulties are caused by the inadequately designed grit-removal and screening facilities which allow grit to enter the sedimentation basins. These inorganic materials cause mechanical equipment failures, interfering with mechanical collection and removal facilities. The inadequate basin capacity and a nominal maintenance program also cause inefficient operation of these basins.

The head house contains eight cylinder-operated cast iron sluice gates. Two gates, normally left open, convey treated effluents to the outfall shaft. The remaining six gates are on the bypass conduit to Newark Bay.

The sludge pumping station contains four sludge recirculating pumps and four raw sludge pumps. Sludge from the sedimentation basin hoppers flows to the station wet well, where it is normally pumped to thickeners, storage tanks and finally barges for disposal at sea. Withdrawn sludge can also flow directly to the barging facilities by means of the old sludge line. The Corps of Engineers, New York District, has reported that for the period of July 1968 through June 1969, 92 sludge trips were made to dump 706,800 cubic yards of sludge in the sludge disposal area in the New York Bight.

The Commissioners recently converted the two original 100-foot diameter by 25-foot high sludge storage tanks to sludge thickening tanks and constructed two new 80-foot diameter by 40-foot high sludge storage tanks and a sludge storage building with sludge pumps, boiler and instrumentation for sludge equipment and piping. The construction of these new facilities provides capacity for better sludge thickening and dewatering as well as reduces the necessity for sludge recirculation back to the sedimentation basins.

Three sludge lagoons have been constructed adjacent to the sludge tanks to receive scum and supernatent from the thickeners, thickened sludge from the storage tanks and for emergency storage purposes. At the time of an inspection by the Federal Water Pollution Control Administration in June 1969, it appeared that these beds were not being operated as intended. Weeds were observed growing in the beds.

The outfall works consist of the conduits, shafts, tunnels and dispersal facilities from the head house to Robbins Reef in Upper New York Bay. The 14-foot diameter Newark Shaft descends nearly 250 feet to a 10.5-foot by 12.5-foot tunnel which extends about 9,000 feet under Newark Bay to the 12-foot diameter Bayonne Shaft, where the flow rises 70 feet to a second segment of the outfall tunnel. The second segment, a 12.0-foot diameter tunnel, extends about 17,000 feet past the Jersey City Shaft to the 12.0-foot diameter Terminal Shaft, where the flow rises 60 feet to the Terminal Chamber. Two 96-inch diameter pipes carry the flow from the Terminal Chamber to the 3.5-acre dispersal field off Robbins Reef, where the waste is discharged through 150 diffusion nozzles spaced at 10-foot centers.

Estimates of Flow

Information contained in the 1968 report shows that during the period 1961 to 1967 flows into the Passaic Valley Newark Bay Plant varied considerably, with an annual average daily flow ranging from about 182 mgd to 232 mgd. Peak hourly flows were estimated at 136 percent of the daily flow. The report also showed that major industrial activities contribute over 57 mgd, or about one-third of the tributary flow, into the Passaic Valley Sewerage Commissioners' collection system.

Recent information from Passaic Valley Sewerage Commissioners indicates that the average flows into the Newark Bay facility range from 240 to 250 mgd. Using 136 percent of the daily flow and 240 mgd as an average flow, the peak hourly flows are estimated at 326 mgd. In addition, hourly flows reaching the treatment facilities during periods of storm are reported to exceed 500 mgd. The Federal Water Pollution Control Administration study in 1967 found an hourly flow rate approaching 420 mgd. Based upon these flow conditions and the capacities previously discussed for the existing facilities, it is apparent that present average daily flows exceed the design capacity of the primary treatment facilities.

Recent Developments Concering The PVSC

In April 1965, New Jersey State Department of Health advised the Commissioners that chlorination of the effluent would be required from May 15 to September 15, beginning in 1967. The State Health Department (under the Public Sanitary Sewerage Facilities Act of 1965) assisted the Commissioners by providing a $20,000 grant for a feasibility study of the required chlorination facilities.

On August 9, 1966, the New Jersey State Department of Health, pursuant to R. S. 58:12-2, ordered that the Passaic Valley Sewerage Commissioners,

> "...must and shall, prior to December 1, 1966, cease the discharge of improperly, inadequately and insufficiently treated sewage into the waters of

> "Upper New York Bay, being waters of this State, and must alter, add to or improve the sewage treatment plant operated by the said Passaic Valley Sewerage Commissioners in order that the sewage received therein shall be cared for, treated, and disposed of and the effluent discharged into the said waters in a manner approved by the State Department of Health of the State of New Jersey, and in order that the treatment and disposal of said effluent shall meet the applicable standards of water quality prescribed by regulations of the State Department of Health entitled 'Classification of the Surface Waters of the Hudson River, Arthur Kill and Tributaries, effective May 16, 1966..."

Copies of the orders of April 1965 and August 1966 are contained in Appendix C.

The Passaic Valley Sewerage Commissioners did not comply with the Health Department's requirement for chlorination, and in March 1967 the Department reaffirmed its order. Since the Commissioners did not noticeably improve the quality of its effluent entering the Upper Bay of New York Harbor, the Department brought suit against the Commissioners in October 1967.

The Commissioners, in presenting their case in November 1967, stated that their facilities were not subject to

State regulatory authority because of the stipulation between the Commissioners and the Federal Government. The Passaic Valley Sewerage Commissioners further stated that more time was needed to construct the chlorination facilities which would improve the quality of the effluent.

The Health Department contended in its suit that it had the authority to regulate the Passaic Valley Sewerage Commissioners' facilities under its broad jurisdiction over any pollution which may pose a threat to, or may injure any inhabitants of, the State of New Jersey.

The Chancery Division of Superior Court supported the State Health Department's authority in this matter and ruled in April 1968 that the State Health Department orders,

> "...deal with the intensity of effluent treatment afforded by defendant's facility which at this time discharges inadequately treated wastes into waters outside the defendant's jurisdiction..."

and,

> "...the Legislature did not delegate to the Passaic Valley Sewerage Commissioners and the contracting municipalities absolute discretion over the determinations of treatment plant 'unit design'..."

Furthermore, the Court stated,

"scientific progress and the Federal Water Pollution

Control Act of 1948 and its amendments have brought such radical changes in national water pollution control policy that the direct working arrangement between the defendant (Passaic Valley Sewerage Commissioners) and the United States embodied in the 58 year old stipulation now appears anachronistic..."

With reference to Section 10(c) of the Federal Water Pollution Control Act, as amended, regarding the authority of State governors or their designated water pollution control agencies to develop water quality criteria, the Court ruled that the New Jersey State Department of Health did have the authority to issue pollution abatement directives to the Commissioners.

The Court also found that the time given the Commissioners to chlorinate and to clean up the treatment plant effluent by the Health Department was within reason.

About fifteen years ago, the highway pavement over the Main Interceptor at McCarter Highway and Governeur Avenue in Newark settled. On November 20, 1967, an examination was conducted and it was determined that there was a break in the sewer. Consultants were engaged to evaluate the problem and in June 1969, five proposed alternative methods of repairing the damaged section of the trunk sewer were suggested. The method selected by the Passaic Valley Sewerage Commissioners proposed an internal repair of the sewer with a resulting diversion of about 115 mgd of raw sewage to the Passaic River during an estimated six-week repair period. Since the bypassing of the raw sewage to the Passaic River could represent a health hazard, the State Department of Health ruled this solution to be unacceptable.

In July 1969, a State legislative committee held a hearing to review the imminent danger to public safety created by the break and the public health hazard that can result from the proposed bypass of raw sewage to the Passaic River. The committee heard testimony and recommended that the Passaic Valley Sewerage Commissioners avoid any repair scheme that involved the bypassing of raw sewage. The committee suggested that pumping sewage through pipes around the section of sewer to be repaired be considered as the preferred solution to the problem.

The Passaic Valley Sewerage Commissioners have recently initiated a bill (#719) in the State Legislature that would authorize an increase in the Passaic Valley Sewerage Commissioners' bonding limits. This bill has been passed by the Senate, but not the Assembly. With the passing of this bill, the Passaic Valley Sewerage Commissioners could be assured of increased bonding authority for future construction.

A. W. Bromberg

STUDY OF PASSAIC VALLEY SEWERAGE COMMISSIONERS WASTE TREATMENT FACILITY

On May 14-15, 17-18, and 19-20, 1967, and August 19-20, 1969, 24-hour studies were conducted by the Hudson-Delaware Basins Office, Federal Water Pollution Control Administration, at the Passaic Valley Sewerage Commissioners' waste treatment facility. Composite samples of the plant influent (every two hours) and effluent (every hour) were collected during each survey. Total and fecal coliform densities were determined on the basis of samples taken every four hours during each 24-hour sampling period. The results of each survey are summarized in Table 2.

The data are generally comparable with values reported by the Passaic Valley Sewerage Commissioners. 12/ High values for flow, BOD, COD, TOC and total suspended solids show the effects of runoff caused by a storm that occurred during the May 17-18, 1967, sampling period.

Primary treatment facilities which receive only typical domestic sewage can be expected to provide 25-40 percent removal of five-day BOD, 40-70 percent removal of suspended solids, 75-100 percent removal of settleable solids, and 25-75 percent reduction of bacterial concentrations. 14/

Table 3 presents a performance summary for the

TABLE 2
DATA, FEDERAL WATER POLLUTION CONTROL ADMINISTRATION STUDY OF PASSAIC VALLEY SEWERAGE COMMISSIONERS WASTE TREATMENT FACILITY 1/

Study Date	Flow mgd	BOD 2/ mg/1	TOC 3/ mg/1	COD 4/ mg/1	Total Settleable Solids ml/1	Total Suspended Solids mg/1	Total Volatile Suspended Solids mg/1	pH	TKN 5/ mg/1	Total Coliform Geometric Mean Million/100 ml	Fecal Coliform Geometric Mean Million/100 ml
						INFLUENT					
Aug. 19-20, 1969 Tue.-Wed.	234	263 6/	266	689	7.4	346	248	6.8	48	230.0	14.0
May 19-20, 1967 Fri.-Sat.	246	297	289	986	22.0	374	282	5.8	38	6.6	1.3
May 17-18, 1967 Wed.-Thurs.	258	384	336	1,122	23.0	437	319	5.8	30	5.9	1.4
May 14-15, 1967 Sun.-Mon.	210	241	192	576	23.8	281	210	7.8	28	11.9	0.6
						EFFLUENT					
Aug. 19-20, 1969 Tue.-Wed.	234	231 6/	209	593	1.8	138	98	6.8	43	270.0	11.0
May 19-20, 1967 Fri.-Sat.	246	295	222	769	2.1	177	120	6.8	35	14.3	2.0
May 17-18, 1967 Wed.-Thurs.	258	334	251	900	5.4	230	152	6.5	35	16.1	2.2
May 14-15, 1967 Sun.-Mon.	210	252	151	481	11.7	219	161	7.9	25	16.0	0.82

1/ Data represents an average of all analysis made on samples taken over the 24-hour period of sampling

2/ BOD: 5-Day 20°C Biochemical Oxygen Demand

3/ TOC: Total Organic Carbon

4/ COD: Chemical Oxygen Demand

5/ TKN: Total Kjeldahl Nitrogen

6/ Based upon 4.5 day BOD determined in the Laboratory

TABLE 3
PERFORMANCE SUMMARY
PASSAIC VALLEY SEWERAGE COMMISSIONERS
WASTE TREATMENT FACILITY

Date of Survey	Flow mgd	5-Day BOD mg/1			Est. BOD Disc. #/Day	Total Suspended Solids mg/1			Est. Total Suspended Solids Disc. #/Day	Total Settleable Solids ml/1		
		Inf.	Eff.	% Rem.		Inf.	Eff.	% Rem.		Inf.	Eff.	% Rem.
Aug. 19-20, 1969 Tue.-Wed.	234	274 1/	239 1/	12.8	467,000	346	138	60.0	269,000	7.4	1.8	76.0
May 19-20, 1967 Fri.-Sat.	246	297	295	0.7	606,000	374	177	69.0	364,000	22.0	2.1	90.0
May 17-18, 1967 Wed.-Thurs.	258	384	334	13.0	719,000	437	230	47.0	496,000	23.0	5.4	77.0
May 14-15, 1967 Sun.-Mon.	210	241	252	0.0	442,000	281	219	22.0	384,000	23.8	11.7	51.0

1/ Based upon 4.5 day BOD determined in Laboratory and adjusted to 5-Day BOD assuming a typical k rate value for raw and settled sewage using: $Y = L\,(1-e^{-Kt})$

four 24-hour surveys conducted by Federal Water Pollution Control Administration. The BOD loading discharged from the plant during the 1969 study was 467,000 pounds per day. Percent BOD removal was about 13 percent. During the 1967 surveys the percent removal ranged from 0 to 13 percent, and the daily BOD loading discharged averaged 589,000 pounds per day. Total suspended solids discharged in the 1969 survey was 269,000 pounds per day, with a percent removal of 60. Percent removals during the 1967 studies ranged from 22 to 69 and the estimated amount of total suspended solids discharged averaged 415,000 pounds per day. The percent removal of settleable solids in 1969 was 76 percent; in 1967 these ranged from 51 to 90 percent. These results indicate that the percent removals achieved by the Passaic Valley Sewerage Commissioners' treatment plant are generally below the acceptable efficiency ranges indicated for typical municipal waste treatment facilities.

A comparison of the BOD removal based upon settling rates (gallons per day per square foot) contained in the "Recommended Standards for Sewage Works," 1968 Edition, with the indicated overflow rates of the existing sedimentation basin reported in the 1968 report on Proposed Head End Facilities, also suggests that BOD removals found during the four studies were lower than might be expected. For example, using an average annual flow of 235 mgd and an overflow rate of 1830 gpd per square foot, the BOD removal based on the Recommended Standards should be approximately 20 percent.

Much of the inefficiency of the settling tanks can be attributed to the poorly operated and inadequately sized grit chambers. These chambers, as discussed earlier, allow large quantities of inorganic solids to reach the sedimentation basins. Inorganic materials have continually interfered with the mechanical sludge collection systems. Shear pin failures, flight breakage, grit and grease accumulations and rag interference with chains and overflow weirs have been reported in studies regarding the plant operations made by consultants to Passaic Valley Sewerage Commissioners. These breakdowns create appreciable overload to the operating basins which are handling more flow than designed for.

A comparison of influent characteristics found during the Federal Water Pollution Control Administration surveys of Passaic Valley Sewerage Commissioners with studies of waste treatment facilities handling wastes primarily from residential and commercial service areas indicate the high strength and complexity of the Passaic Valley Sewerage Commissioners wastewater. In the Passaic Valley Sewerage Commissioners' influent, BOD, suspended solids and settleable solids concentrations were generally 50 percent greater and values of COD were two to three times greater than those found in typical domestic collection systems, indicating the effect of the industrial load. The high concentrations of soluble oxygen demanding materials, which are not readily removed by sedimentation, may be another factor in the low BOD removals of the Passaic Valley Sewerage Commissioners' waste treatment facility.

An inadequate maintenance program may also reduce the efficiency of the primary units. During a June 1969 inspection, it was observed that scum and solids were built up around the discharge weirs of many of the sedimentation basins. Many of the overflow weirs were not properly adjusted and several were completely submerged.

WATER QUALITY STUDIES

Water Movement and Dispersion

New York Harbor, which is the receiving body for the inadequately treated wastewaters of the Passaic Valley Sewerage Commissioners, forms part of an hydraulically complex tidal water system with interconnections between Raritan Bay through the Arthur Kill-Kill Van Kull, Long Island Sound through the East River, the Atlantic Ocean through the Narrows and the Hudson River. An examination of the movement of water through the harbor indicates the probable paths of flow of the wastewater discharge at Robbins Reef. Dye studies, carried out in September 1964[16] and August 1969, provided some information regarding water movement and dispersion characteristics in the harbor.

In September 1964, 1,000 pounds of Rhodamine B dye were released at high water slack over the Passaic Valley Waste Treatment Plant Outfall near Robbins Reef. This dye release showed the following results:

1. Pollutants introduced at Robbins Reef affect a broad area of the Lower Bay of New York Harbor, and are found on the Staten Island shore from Midland Beach to the Narrows within six hours of release;

2. Within 32 hours of release, such material affects a large area of Raritan Bay and is found on the Staten Island shore from the Narrows to Great Kills, as well as on the Coney Island shore of Brooklyn;

3. On an ebb current there was little lateral mixing across the Narrows, but lateral mixing does occur on the first flood current following release;

4. Pollutants moving from the release point on the first ebb pass along the western edge of the channel and the Staten Island shore before passing through the Narrows.

The limits of the 1964 dye mass at various stages of time following release are shown in Figure 2, which is on the screen to your left.

On August 14, 1969, 1,600 pounds of dye were placed in the Passaic Valley Sewerage Commissioners Outfall Works and discharged to the Upper Bay at Robbins Reef at high water slack. The results, which confirm the dispersion pattern found during the 1964 study, are:

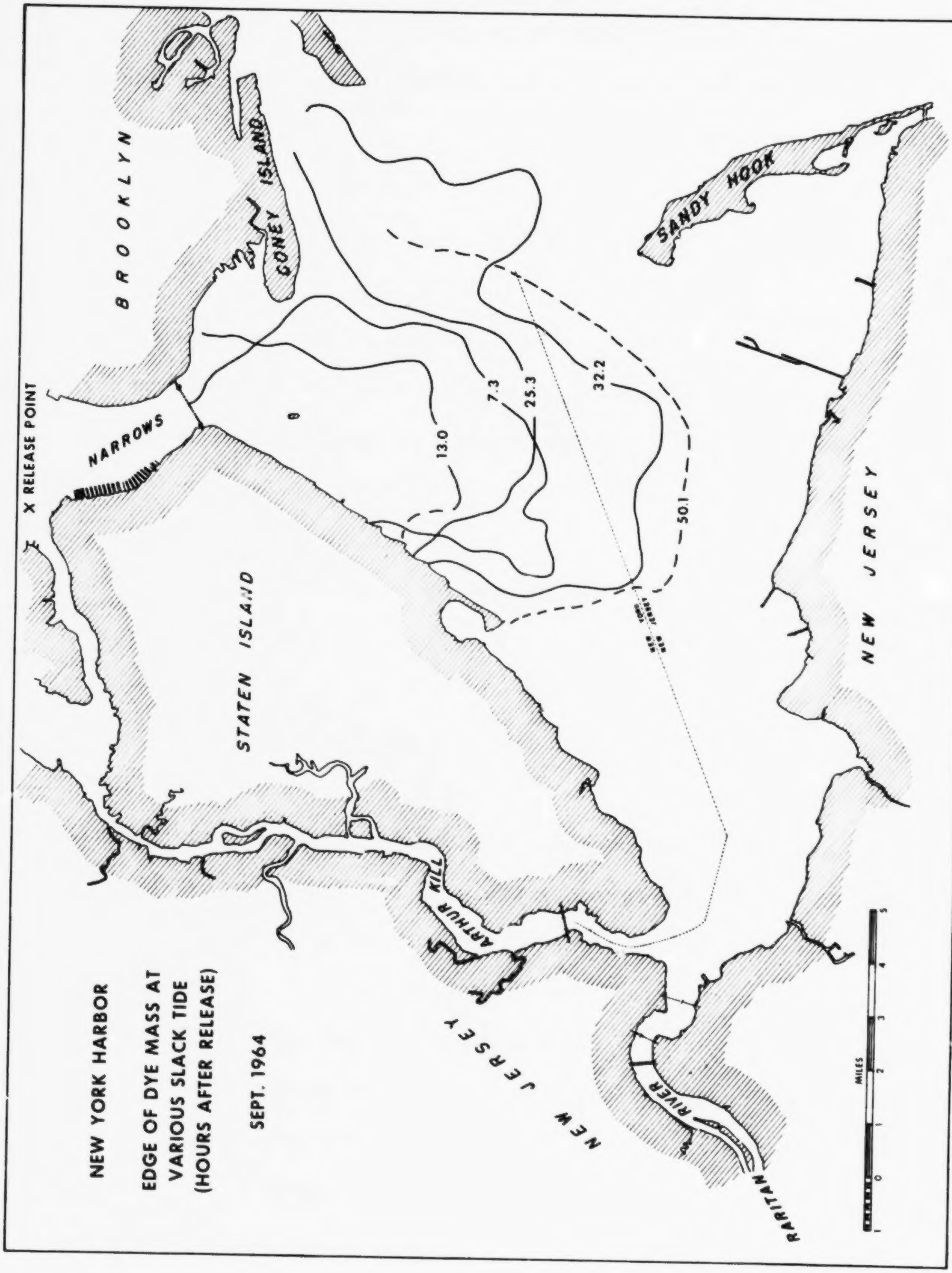
1. At high water slack, the dye diffuses across the harbor channel and slightly north and south of the dispersal field;

2. The bulk of the dye remains below the water surface and does not initially disperse rapidly;

3. Within three hours of release through the dispersal field, dye was carried outside the Narrows and was well dispersed across the main channel;

(4) Within six hours of the initial release, dye reached the South Beach, Staten Island and the Coney Island bathing beaches in Brooklyn.

The results of the two dye studies indicate that pollution materials, such as bacteria discharged at Robbins Reef from the Passaic Valley Sewerage Commissioners' waste treatment facilities, can reach the recreational bathing beaches of Staten Island and Coney Island within six hours after release Pathogenic organisms, which are likely to be present in an unchlorinated wastewater discharge, are a definite health


X RELEASE POINT
NARROWS
BROOKLYN
CONEY ISLAND
SANDY HOOK
STATEN ISLAND
NEW JERSEY
NEW JERSEY
ARTHUR KILL
RARITAN RIVER
NEW YORK
NEW JERSEY
0
13.0
7.3
25.3
32.2
50.1
MILES
1
0
1
2
3
4
5

NEW YORK HARBOR

EDGE OF DYE MASS AT VARIOUS SLACK TIDE (HOURS AFTER RELEASE)

SEPT. 1964

Figure 2

hazard to persons utilizing the waters of Lower Bay for recreational purposes.

Water Quality - New York Harbor

The waters of the Upper Bay of New York Harbor receive the discharges of raw and treated wastewaters from sources in New York and New Jersey, including the Passaic Valley Sewerage Commissioners. These wastes affect the quality of water throughout the harbor. Details regarding these discharges have been presented in previous conference reports. Wastewater discharged from Passaic Valley Sewerage Commissioners at Robbins Reef account for about one-fifth of the total estimated flow and nearly one-half of the total organic load entering these waters daily. The data also show that present treatment reduces the total organic load from all New York sources by approximately 56 percent; from all New Jersey sources except PVSC by approximately 35 percent; and from the Passaic Valley Sewerage Commissioners by approximately 10 percent. Most of the municipalities and industries in the conference area except the Passaic Valley Sewerage Commissioners are moving ahead to meet the conference recommendations.

Water quality in Upper Bay of New York Harbor has been investigated throughout the years by the States of New

Jersey and New York, the Federal Water Pollution Control Administration, the Interstate Sanitation Commission, and New York City. These studies show that the waters of the harbor have been and are degraded. Dissolved oxygen levels fall to values less than 3.0 mg/l and mean total coliform densities are in the tens of thousands. Bimonthly surveillance surveys of New York Harbor by the Federal Water Pollution Control Administration show that water quality for these waters does not meet the approved water quality standards for either New York or New Jersey.

Data for dissolved oxygen for the period January through December 1968 obtained from three automatic water quality monitoring stations operated by the Federal Water Pollution Control Administration illustrate the degraded quality of water in the harbor. These data are summarized below.

Station	% Time Less Than 3 mg/1	% Time Less Than 4 mg/1
U. S. Gypsum	54	60
Kill Van Kull		
New Brighton, S. I., N. Y.		
Outerbridge Crossing	39	49
Arthur Kill		
Quarantine Station	25	38
Narrows		
Rosebank, S. I., N. Y.		

A 24-hour study of the Upper Bay of New York Harbor was conducted on August 19-20, 1969, to determine the quality of these waters in relation to the approved standards. Six stations located around the Passaic Valley Sewerage Commissioners' dispersal field were sampled, 5 feet from the surface and 5 feet from the bottom, every one-and-one-half hours. Parameters analyzed included temperature, dissolved oxygen, pH, conductivity and total and fecal coliform.

The results of the survey are presented in Appendix D. Figures 3, 4 and 5 show the averages for dissolved oxygen (percent saturation) and geometric means for total and fecal coliform concentrations for the surface stations. Figures 6, 7 and 8 show the profiles for deep stations.

The survey results show that 84 percent of all the samples examined contained dissolved oxygen levels less than the 50 percent saturation established by the water quality standards of New York and New Jersey. In the majority of cases, values were below the minimum of 3.0 mg/1 established by the New York standards.

Average dissolved oxygen levels in both surface and deep samples fell below the 50 percent saturation limit. The lowest average value of 31 (surface) and 39 (deep) percent saturation was found at the most northern station (Station 18 - closest to Battery) while the highest of 39 and 47 percent saturation occurred at the most southern station (Station 21 - closest to the Narrows).

Variation of dissolved oxygen, as shown by the typical percent saturation profile for Station 20 (Figure 9), is primarily attributed to tidal influences. Values for percent saturation at deep stations reached high levels during high tidal stages and low levels during low tidal stages. At each surface station, the profile indicates that dissolved oxygen during evening hours did not increase with the high tide and generally remained at the lower levels. Respiration by phytoplankton may account for this lack of improved oxygen regardless of tidal stage, during evening hours.

Total coliform densities, which also appear to be affected by tidal conditions, ranged from 31,000 to over 1,000,000 per 100 ml for surface stations, and from 7,300 to 4,000,000 per 100 ml for deep stations. The highest counts during the survey period were found in deep water at Station 18, the most northern station; at Station 19, just north of the dispersal field; and at Station 20, just south of the dispersal field. An analysis based on geometric mean total coliform densities shows higher mean values for the surface stations occurring at Kill Van Kull, Station 22, and just north (Station 19) and south (Station 20) of the Passaic Valley Sewerage Commissioners' effluent dispersal field; for the deep stations the higher values were at the northernmost station (Station 18) and just north (Station 19) of the dispersal field.

The fecal coliform densities exhibited the same general pattern as total coliform. Fecal coliform counts varied from 1,300 to 130,000 per 100 ml and 1,000 to over 760,000 per 100 ml, respectively, for surface and deep stations. The geometric mean fecal coliform levels show that the higher mean levels at the surface occurred at Kill Van Kull (Station 22) and at the surface and bottom just north of the dispersal field (Station 19). These high fecal coliform levels strongly suggest gross contamination of the majority of the waters in New York Harbor by the discharge of human wastes.

Two other 24-hour water quality studies of the harbor were conducted on July 10-11 and 16-17, 1969. Seventeen stations were sampled shallow and deep every four hours for the 24-hour period. These stations centered again around the Passaic Valley Sewerage Commissioners' dispersal field and were arranged in three concentric circles. Data collected during these surveys indicated similar water quality conditions as those found during the August 19-20, 1969, survey. In nearly all cases dissolved oxygen was less than 50 percent saturation. Total coliform levels ranged from 6,000 to 2,000,000 organisms per 100 ml and fecal levels ranged from 400 to 1,000,000 per 100 ml. Again, variations in parameters were observed to coincide with tidal conditions. Highest values for dissolved oxygen and lower densities of coliform organisms were found at the station nearest the Narrows. Poorest quality conditions existed at the most northern station closest to the Battery in Manhattan.

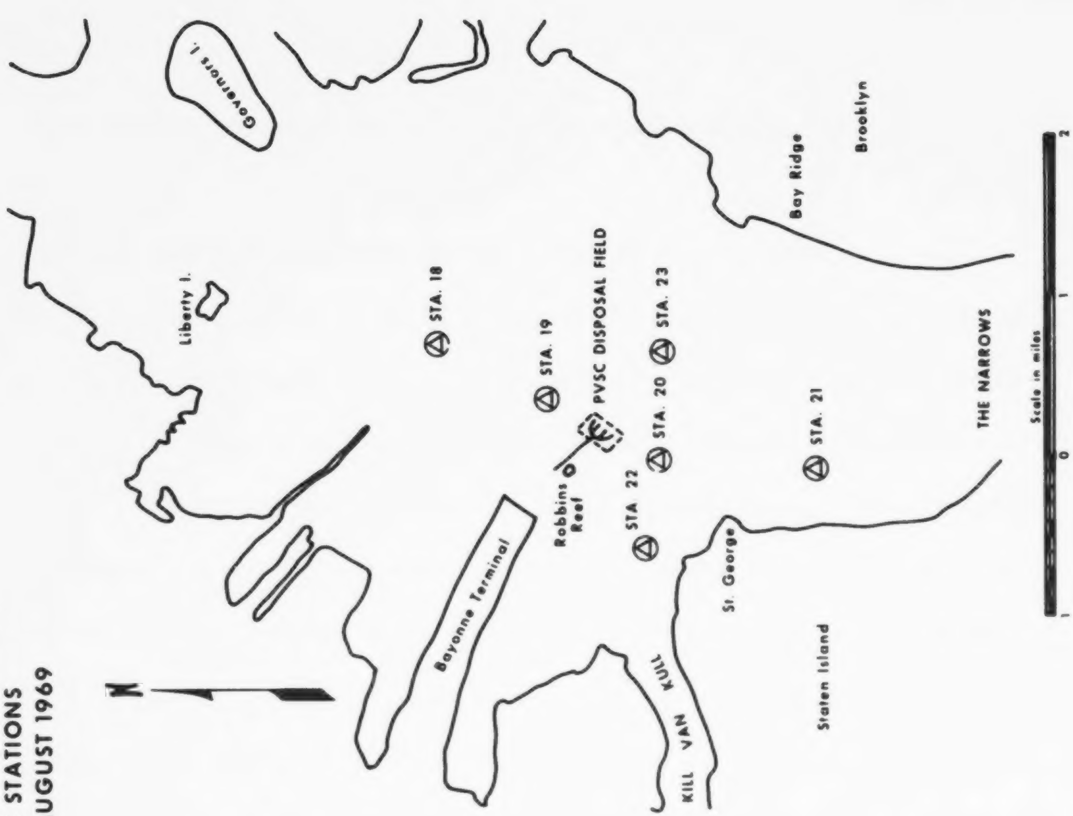
Bacteriological Studies

Coliform Bacteria

Bacteriological examinations were concurrently

DISSOLVED OXYGEN

AVERAGE VALUES
UPPER BAY-NEW YORK HARBOR
SURFACE STATIONS
19 & 20 AUGUST 1969


Governors I.
Liberty I.
STA. 18
STA. 19
PVSC DISPOSAL FIELD
STA. 20
STA. 23
STA. 21
STA 22
Robbins Reef
Bayonne Terminal
KILL VAN KULL
St. George
Staten Island
THE NARROWS
Bay Ridge
Brooklyn
Scale in miles
1
0
1
2

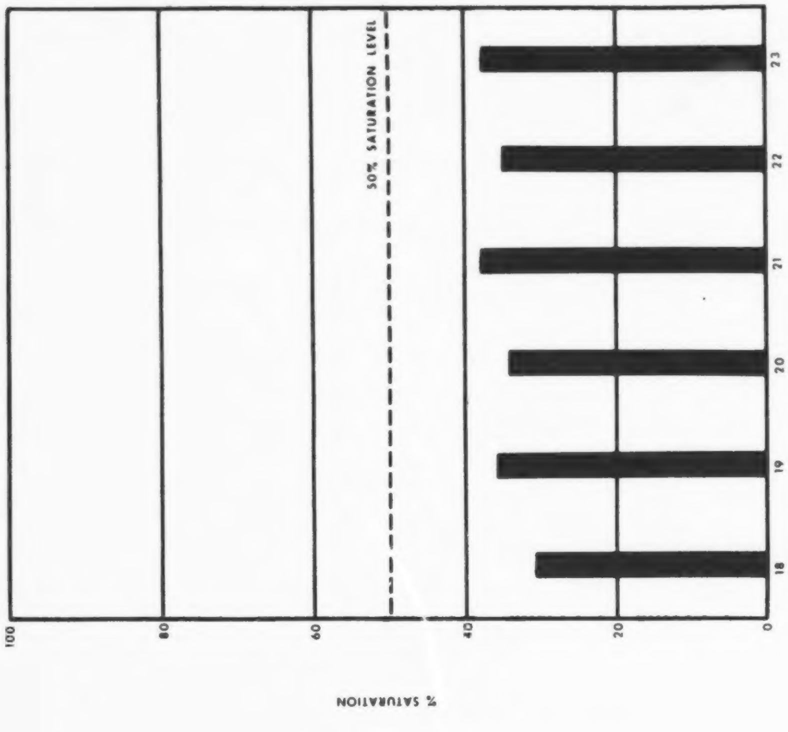
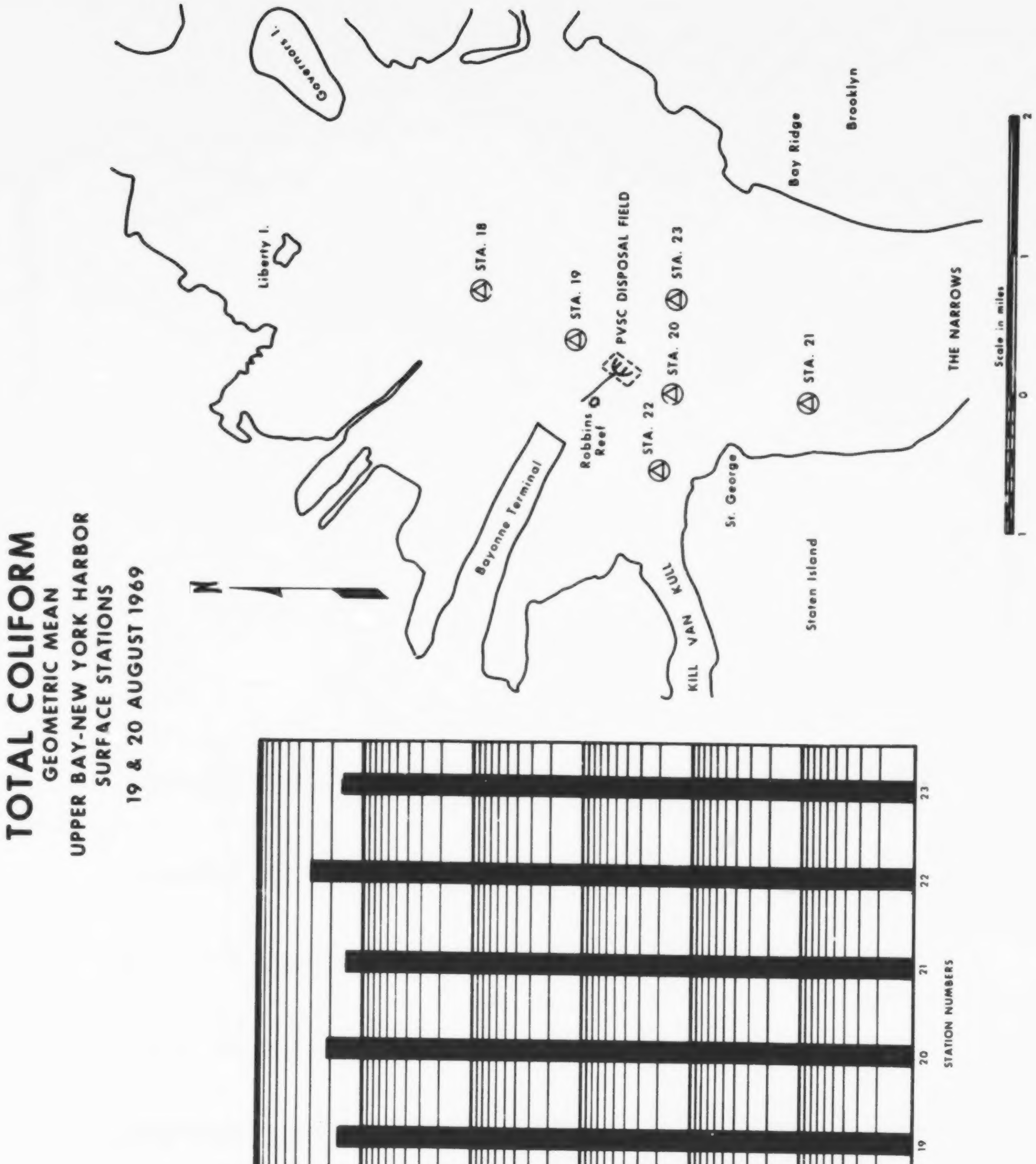


Figure 3



TOTAL COLIFORM
GEOMETRIC MEAN
UPPER BAY-NEW YORK HARBOR
SURFACE STATIONS
19 & 20 AUGUST 1969

Figure 4

FECAL COLIFORM
GEOMETRIC MEAN
UPPER BAY-NEW YORK HARBOR
SURFACE STATIONS
19 & 20 AUGUST 1969

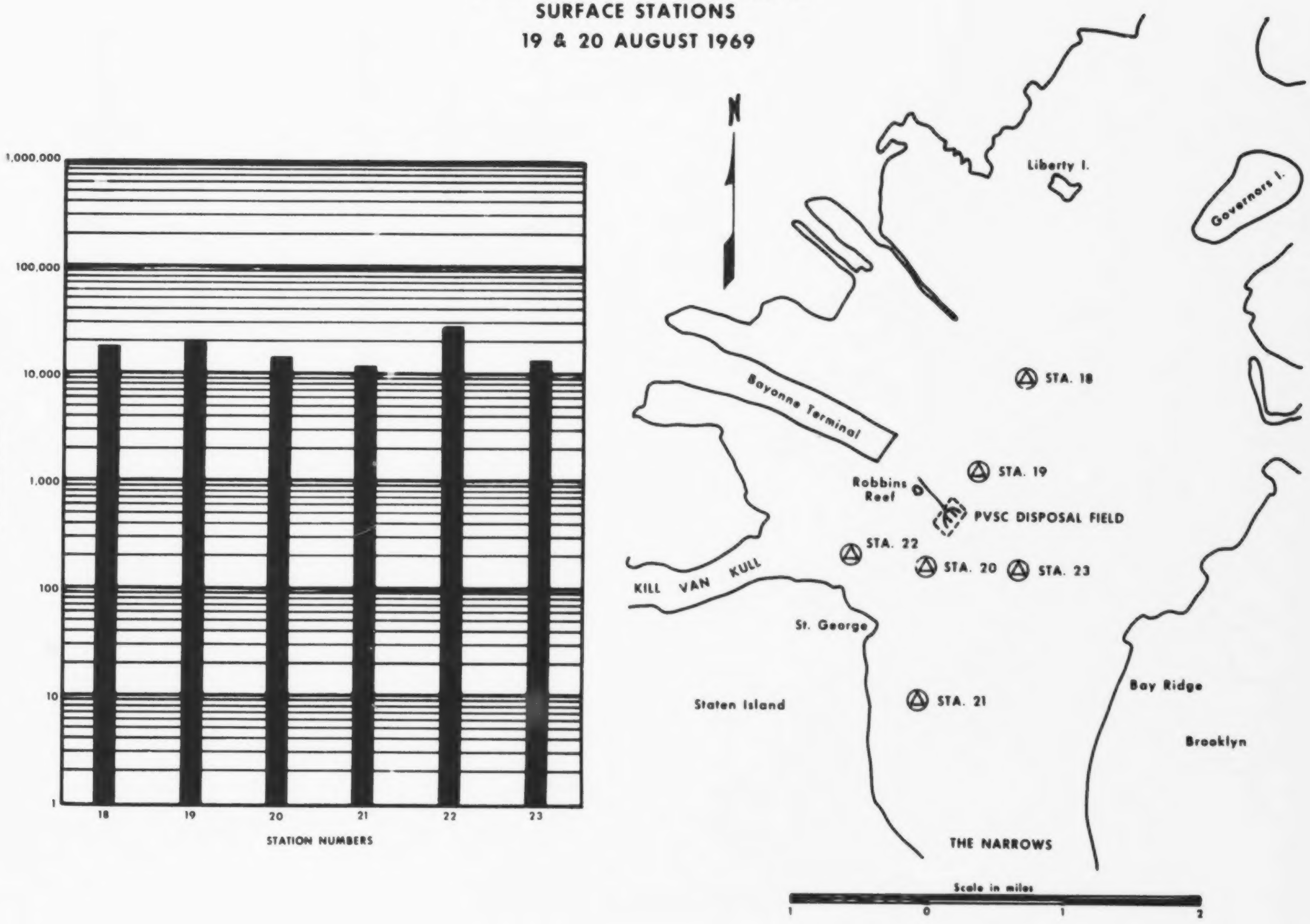


Figure 5

DISSOLVED OXYGEN
AVERAGE VALUES
UPPER BAY-NEW YORK HARBOR
DEEP STATIONS
19 & 20 AUGUST 1969

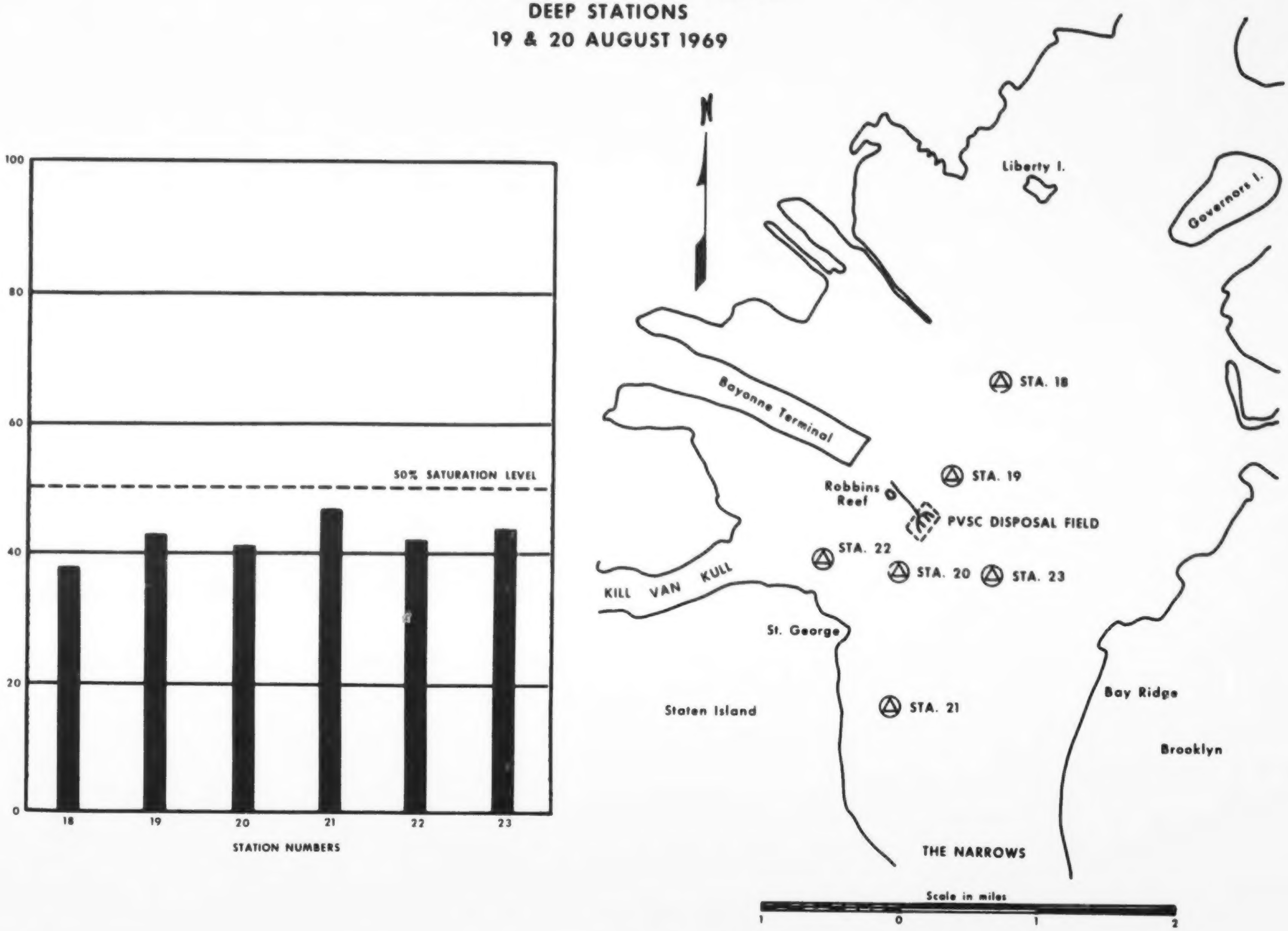


Figure 6

TOTAL COLIFORM
GEOMETRIC MEAN
UPPER BAY-NEW YORK HARBOR
DEEP STATIONS
19 & 20 AUGUST 1969

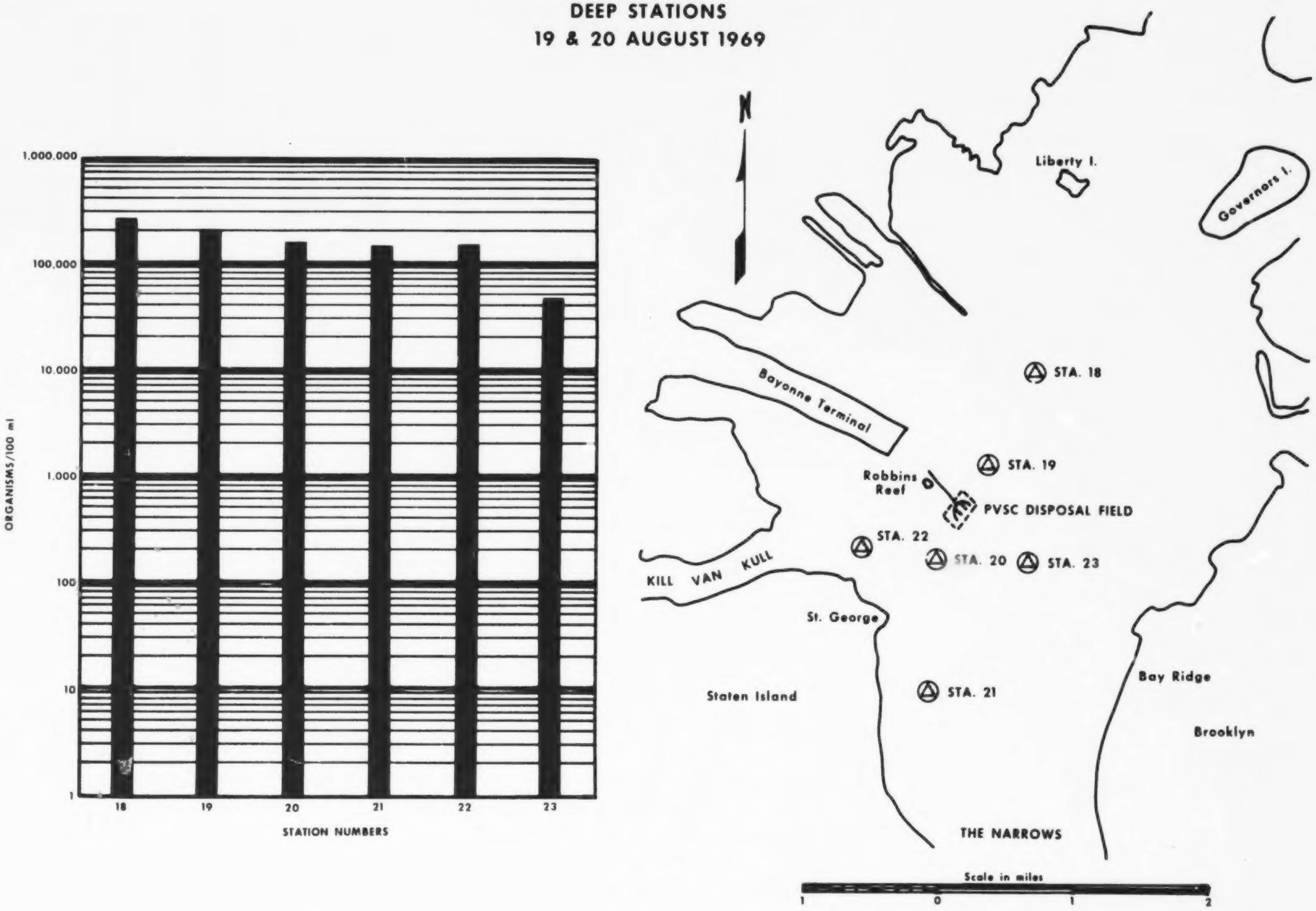


Figure 7

FECAL COLIFORM
GEOMETRIC MEAN
UPPER BAY-NEW YORK HARBOR
DEEP STATIONS
19 & 20 AUGUST 1969

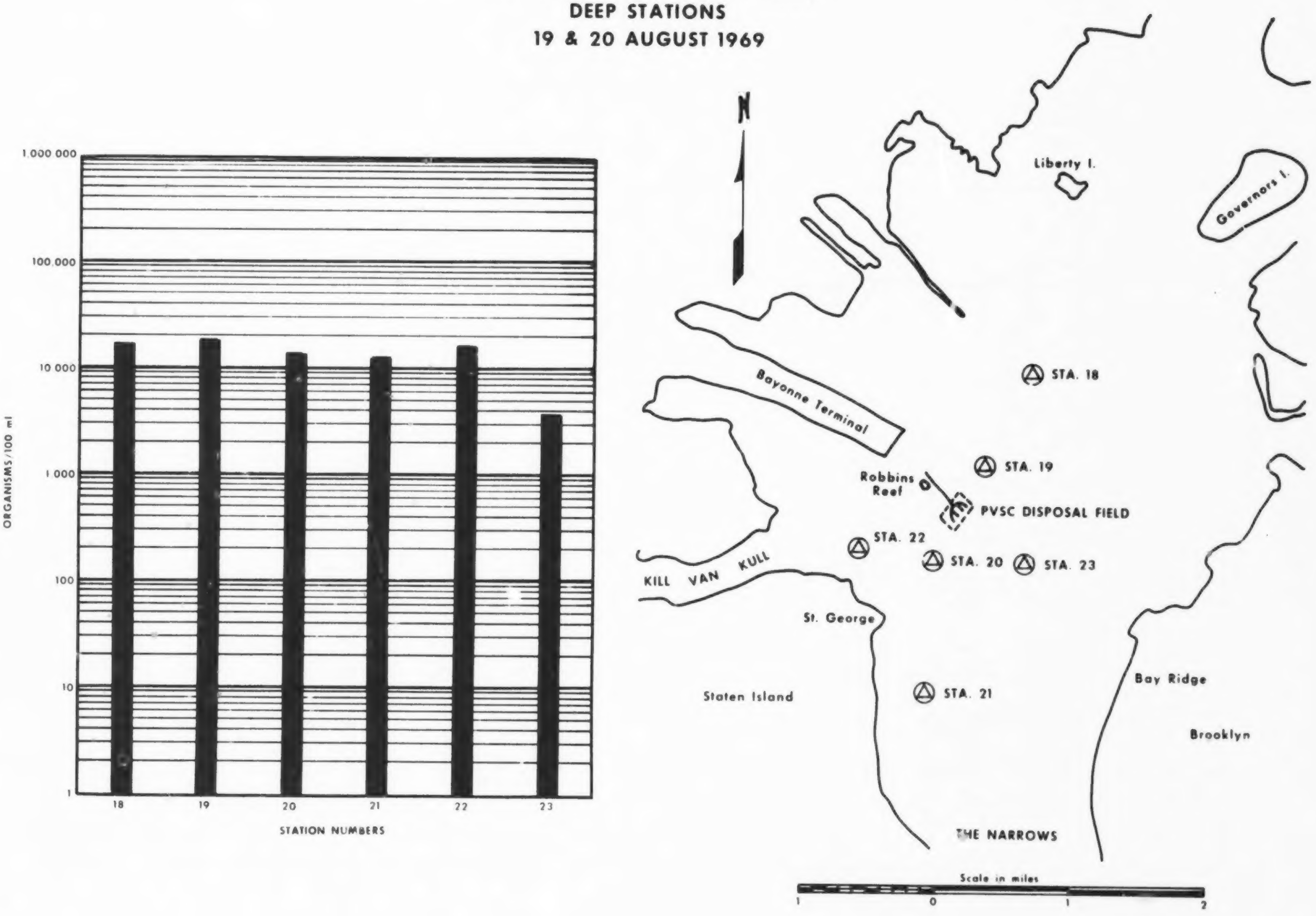


Figure 8

DISSOLVED OXYGEN
UPPER BAY-NEW YORK HARBOR
19 & 20 AUGUST, 1969
STATION 20

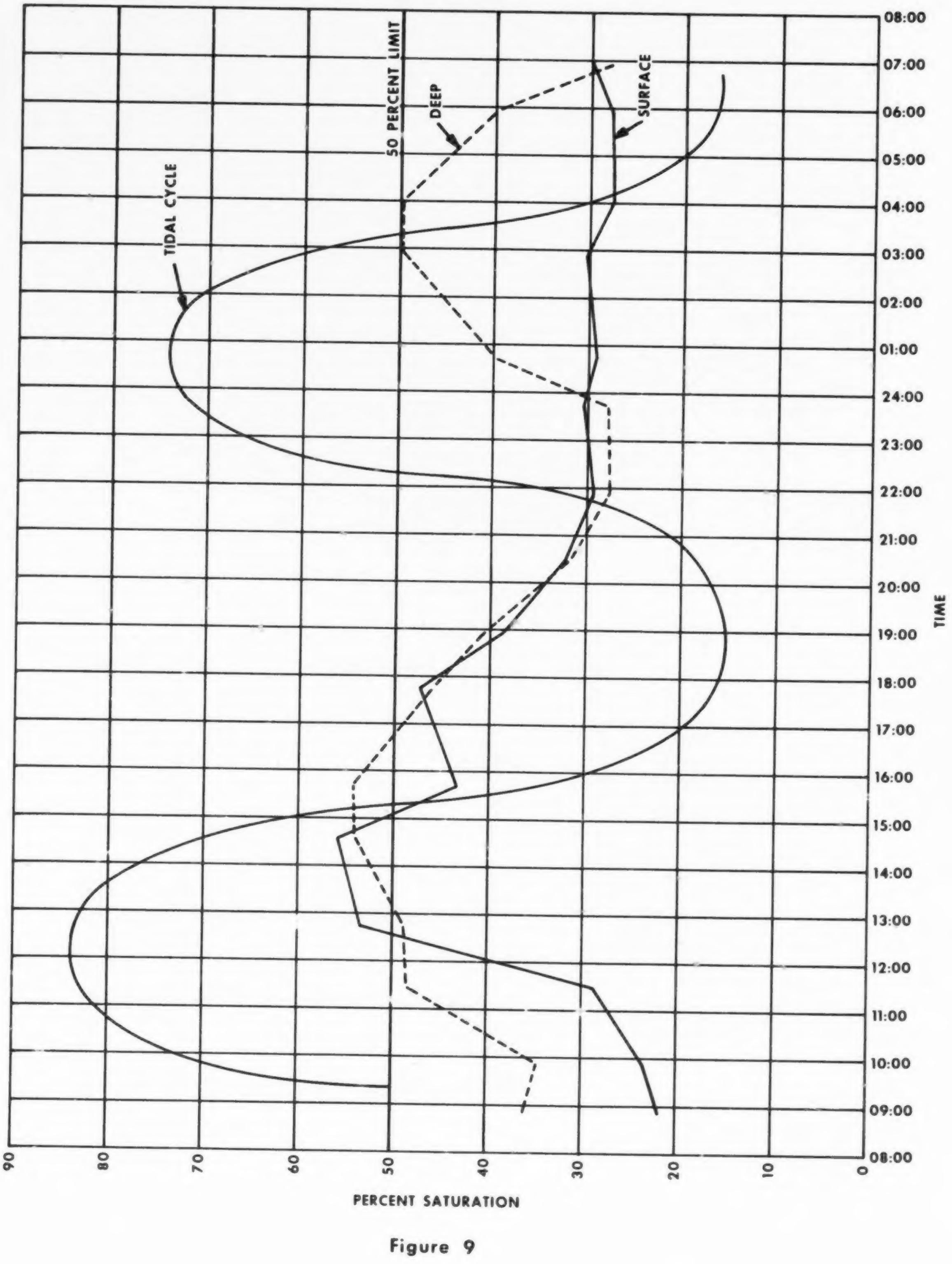


Figure 9

conducted in the waters adjacent to the Passaic Valley Sewerage Commissioners' dispersal field and the effluent of the waste treatment facility. The purpose of the simultaneous sampling and analysis was to determine the presence of high densities of intestinal bacteria in the plant effluent and in the waters surrounding the dispersal field.

Since the time required for transit of material discharged at Robbins Reef to South Beach and Midland Beach on Staten Island is approximately six hours, studies were conducted to obtain data on the survival characteristics of the coliform bacteria during a six-hour exposure period. These studies were conducted at four stations located at Robbins Reef, Buoy 22 and at Quarantine Station in the Narrows; and at South Beach on Staten Island. Details of this study are included in Appendix E. Results indicated that a minimum of 20,000 organisms per 100 ml survived the six-hour exposure for passage of sewage from the outfall at Robbins Reef to South Beach and Midland Beach on Staten Island. From 58 to 95 percent of the coliforms at all stations survived the six-hour exposure period and exceeded the New York State coliform standard for bathing beach water. This is evidence that these beaches are unsafe for swimming.

Pathogenic Bacteria

The presence of high levels of fecal coliform bacteria in the Passaic Valley Sewerage Commissioners' waste effluent and the receiving water are indicative of dangerous fecal contamination from warmblooded animals. Samples of the effluent contained enteric pathogenic bacteria. Four different Salmonella serotypes were isolated. Samples at the sewage dispersal field at Robbins Reef yielded five Salmonella serotypes. The occurence of such pathogens, which cause gastroenteritis in man, pose a hazard to water users in the Upper Bay.

Although it is known that seawater manifests a bactericidal effect on intestinal bacteria, it cannot be relied upon to completely dispose of pathogens emanating from inadequately treated sewage. Previous studies conducted in Raritan Bay (1967)[16] indicate that the salmonellae may persist in estuary water for various periods of time. Studies were undertaken to determine whether enteric pathogenic bacteria may survive the six-hour exposure period required for travel from the Robbins Reef dispersal area to beaches on Staten Island. Water was collected at the dispersal area, placed in sterile dialysis tubing and immersed for six hours in the Upper Bay water. The dialyzer tubing used is permeable to water and allows the passage of low molecular weight compounds in aqueous solution, while retaining materials with molecular weights of 12,000 and higher, such as proteins. Bacteria, as a result, will be retained by the membrane; however, viruses and bacteriophage will be allowed passage along with low molecular weight materials in aqueous solution. Details of this study are included in Appendix E.

Salmonellae were detected in the outfall receiving water prior to in situ immersion of the dialysis chambers. After six hours' exposure in the Upper Bay receiving water, salmonellae could still be isolated from the sample water. The fact that a similar serotype in addition to other serotypes could still be isolated after six hours' exposure to the bay waters establishes a potential effect on the beaches below the Narrows. Realiability of these data are reinforced by the routine isolations of salmonellae made in previous studies at South Beach and Midland Beach on Staten Island and by the isolation of S. enteritidis er. san diego at South Beach on September 4, 1969.

Two of the salmonella serotypes isolated from the Passaic Valley Sewerage Commissioners' effluent are among the top ten serotypes infecting man in the United States, as indicated in the United States Public Health Service Salmonella Surveillance Reports.

Water Quality - Passaic River

A survey was conducted on June 5, 1969, by the

Federal Water Pollution Control Administration to determine whether water quality in the Passaic River meets the approved water quality standards. The study area extended from the confluence of Passaic River with Newark Bay to the Route 46 bridge near Little Falls. This stretch is within the service area of the Passaic Valley Sewerage Commissioners. The State of New Jersey has classified these 32 miles of river as Class FW-2 above Little Falls; Class FW-3 from Little Falls to Dundee Dam; and Class TW-3 in the tidal section from Dundee Dam to the Newark Bay confluence. These classifications have been given to you. The water quality criteria to meet these classifications are contained in Appendix B.

Water samples were collected at 15 stations, of which 10 were located in the tidal portion below Dundee Dam. Table 4 describes each station and its river mileage from Newark Bay. Parameters measured at each station were: temperature, dissolved oxygen (DO), pH, total organic carbon (TOC), and total and fecal coliform. Table 5 summarizes the results of the survey.

Figure 10 presents the DO profile of the Passaic River from near Little Falls to Newark Bay. Dissolved oxygen in the fresh water portion was generally above 6.0 mg/l, reaching a maximum of 9.8 mg/l at Dundee Dam. In the tidal section dissolved oxygen showed a significant decrease, in most instances, to levels below the minimum 2.5 mg/l established by the New Jersey standards. A complete depletion of DO occurred at mile 4.7 in the vicinity of Harrison. Similar DO conditions were observed during a July 1968 Federal Water Pollution Control Administration survey, when a low of 0.2 mg/l occurred at mile 1.1 near Kearny Point.

Total coliform densities ranged from 9,700 organisms per 100 ml above the Passaic Valley Sewerage Commissioners' service area near Two Bridges to 500,000 organisms per 100 ml in the tidal section near Newark Bay. Figure 11 presents the profile for total coliform levels for the area studied. Total coliform levels in all samples in the freshwater portion exceeded the 1,000 organisms per 100 ml monthly average suggested by the standards. Levels increased from 9,700 per 100 ml near Little Falls to 68,000 per 100 ml about 2.5 miles above Dundee Dam near East Paterson. In the tidal section, densities showed an increasing trend from about 20,000 per 100 ml just below Dundee Dam to 500,000 per 100 ml at the confluence of the Passaic with Newark Bay. Levels dropped to about 17,000 per 100 ml in the bay. The results of our 1968 survey showed a similar distribution of total coliform densities with an increase in levels from 44,000 per 100 ml below Dundee Dam to 160,000 per 100 ml near Harrison.

Fecal coliform densities, which represent an indication of recent contamination with the feces of warm-blooded animals such as man, were found to be high throughout the study area. Figure 12 shows the fecal coliform profile found during the June 5, 1969, survey. Fecal coliform levels were less than 1,000 organisms per 100 ml upstream of the Passaic Valley Sewerage Commissioners' service area, but increased sharply to levels in excess of 5,000 per 100 ml within the service area. Fecal coliform levels in the tidal section followed the same upward trend as for total coliform, increasing from 4,000 per 100 ml below Dundee Dam to 68,000 per 100 ml at the confluence with Newark Bay. In Newark Bay, fecal coliform counts dropped to 2,100 per 100 ml.

During the Federal Water Pollution Control Administration 1968 survey, similar fecal coliform levels at all stations were high, particularly in the tidal section. Below Dundee Dam, the fecal coliform count increased from 5,000 to 24,000 per 100 ml near Harrison. Levels decreased to 3,900 at Newark Bay.

Although the water quality standards contain no criteria for fecal coliform, the survey data indicate that the Passaic River throughout the 32 miles of study is contaminated by wastes from warmblooded animals. This contamination is a health hazard for persons who come into contact with these waters.

TABLE 4

SAMPLING STATIONS
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
SURVEY OF PASSAIC RIVER
JUNE 5, 1969

Station No.	Mileage	Station Description
TW-0	0.0	In channel off buoy N-24 (Newark Bay)
TW-1	1.1	South of Central R.R. of N.J. Bridge
TW-2	2.8	North of Overhead Power Cable & South of D.L. & W.R.R.
TW-3	4.7	Jackson St. Bridge
TW-4	6.3	Clay St. Bridge
TW-5	8.8	Rutgers St. Bridge
TW-5A	10.7	Kingsland Ave. Bridge
TW-6	13.2	Union Ave. Bridge
TW-7	15.2	Eighth St. Bridge
TW-8	17.1	Below Dundee Dam at Outwater Lane Bridge
FW-1	17.5	Above Dundee Dam
TW-2	20.2	Route 4 Bridge
FW-2A	23.7	6th Ave. Bridge (Paterson)
FW-3	27.0	Hillary St. Bridge
FW-4	32.4	Route 46 Bridge (Little Falls)

TABLE 5

DATA, FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
SURVEY OF PASSAIC RIVER
JUNE 5, 1969

Station	Water Temp. °C	pH Std. Units	DO mg/1	TOC 1/ mg/1	Total Coliform Org./100 ml	Fecal Coliform Org./100 ml
TW-0	21.8	7.3	1.4	12	17,000	2,100
TW-1	22.2	7.1	1.0	10	500,000	68,000
Tw-2	24.5	7.2	2.4	9	400,000	40,000
TW-3	23.0	7.2	0.0	14	340,000	52,000
TW-4	23.0	7.3	0.8	13	300,000	38,000
TW-5	23.0	7.3	1.3	13	42,000	5,100
TW-5A	22.1	7.4	2.7	14	50,000	7,100
TW-6	24.0	7.6	6.7	16	21,000	5,700
TW-7	21.5	7.6	2.7	14	26,000	2,100
TW-8	21.5	7.4	8.2	15	21,000	4,000
FW-1	22.0	7.2	9.8	15	14,000	3,800
FW-2	21.0	7.4	6.3	16	68,000	5,800
FW-2A	22.0	7.3	8.6	14	40,000	4,700
FW-3	21.5	6.8	6.2	21	15,000	440
FW-4	21.0	6.8	5.8	12	9,700	640

1/ TOC: Total Organic Carbon

DISSOLVED OXYGEN
PASSAIC RIVER PROFILE
NEWARK BAY TO LITTLE FALLS
5 JUNE 1969

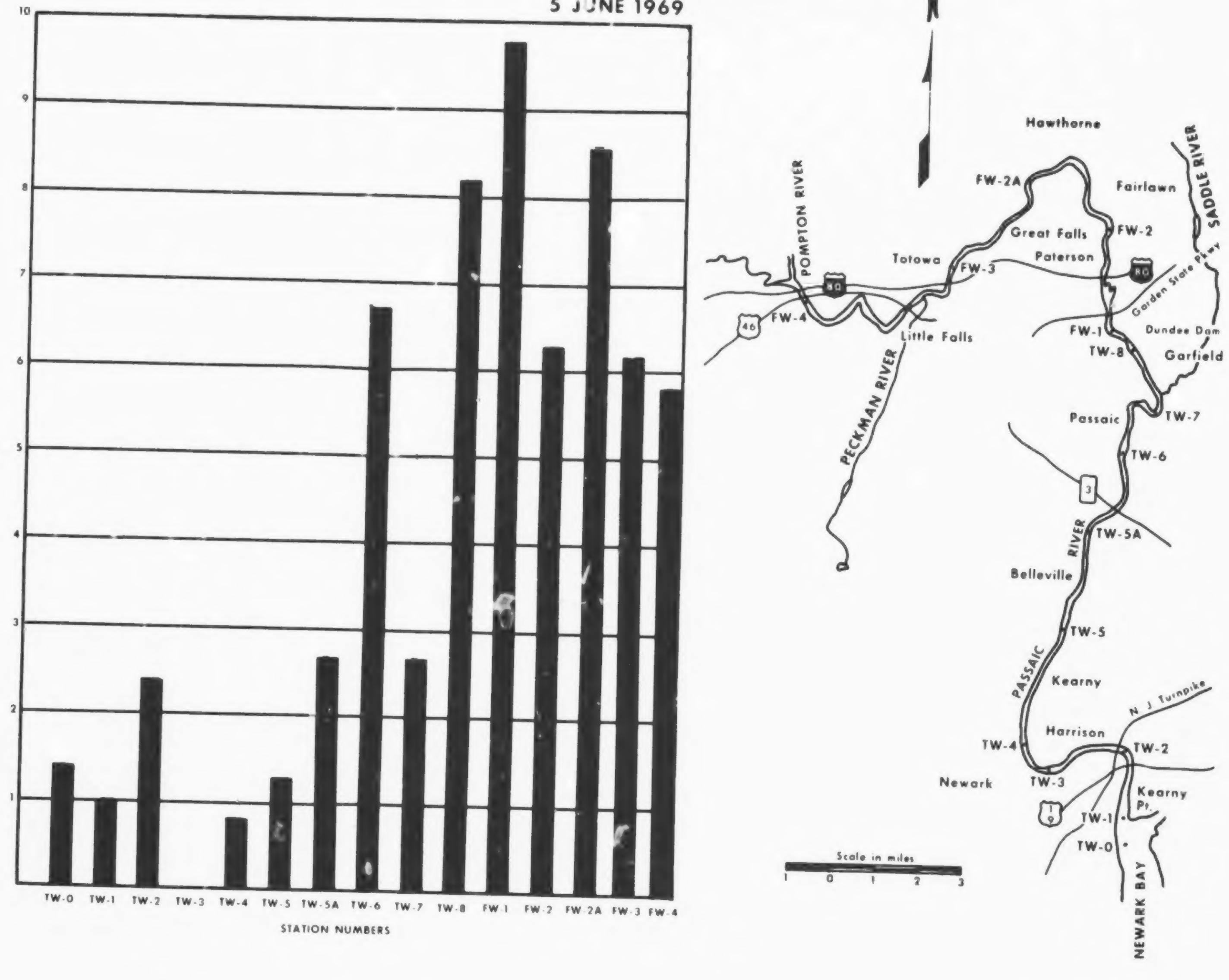
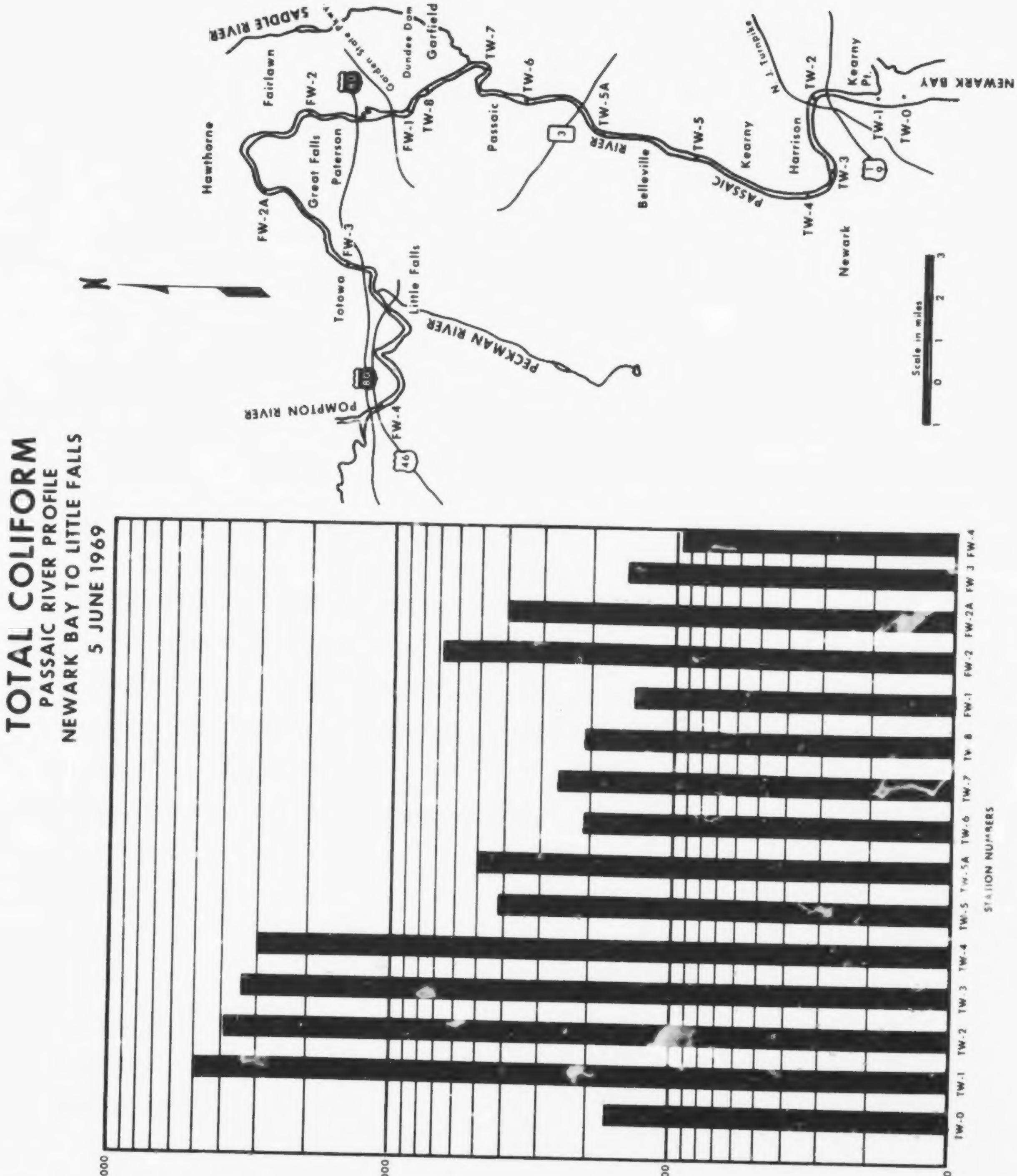


Figure 10



TOTAL COLIFORM
PASSAIC RIVER PROFILE
NEWARK BAY TO LITTLE FALLS
5 JUNE 1969

Figure 11

FECAL COLIFORM
PASSAIC RIVER PROFILE
NEWARK BAY TO LITTLE FALLS
5 JUNE 1969

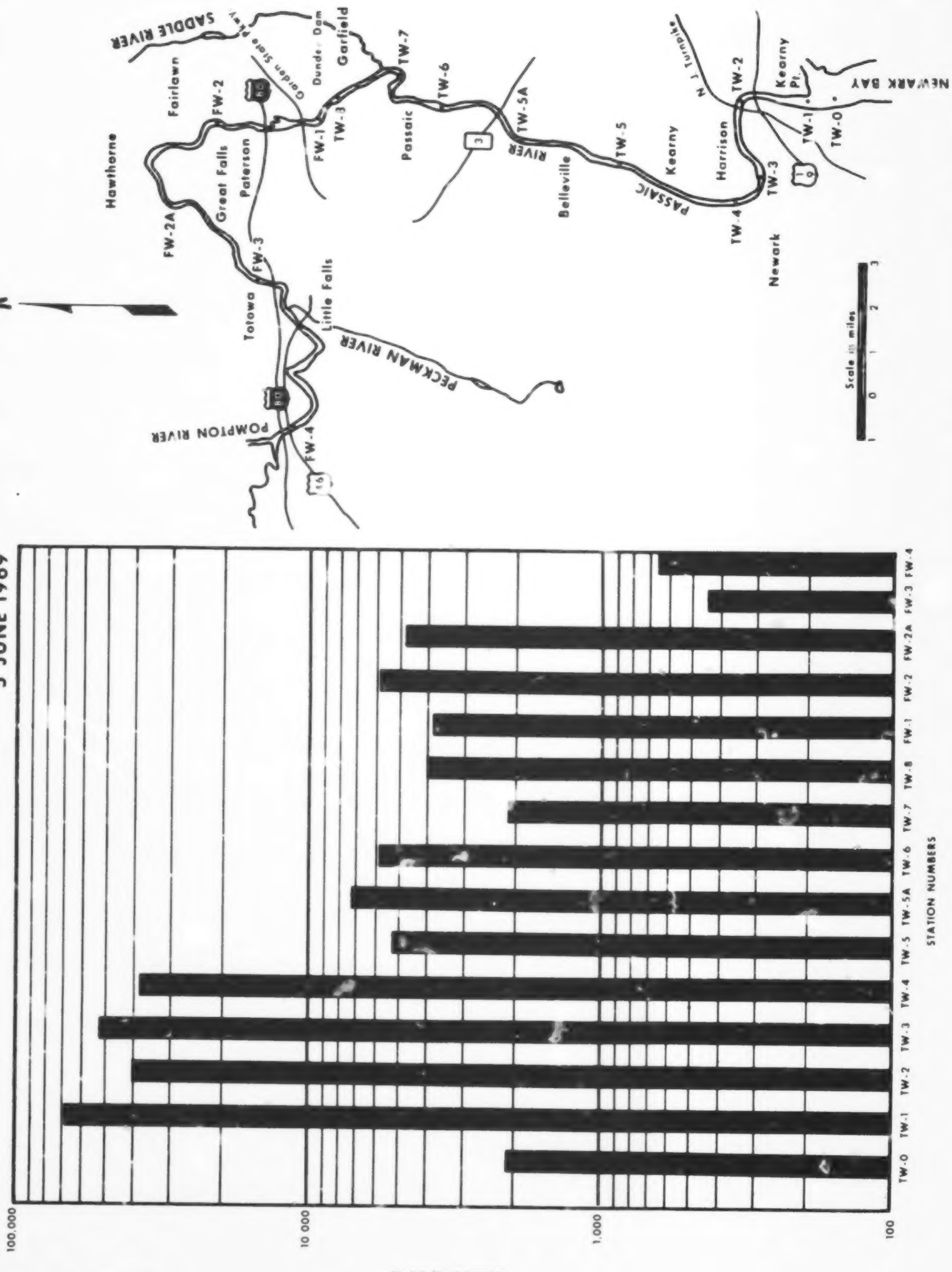


Figure 12

A. W. Bromberg

Outfall Study - Passaic River

To determine the cause of poor water quality in the Passaic River, surveys were conducted by the Federal Water Pollution Control Administration and the New Jersey State Department of Health during June-November 1969 to locate wastewater discharges to the Passaic River between Little Falls and Newark Bay. The Passaic Valley Sewerage Commissioners have also conducted surveys in an effort to identify outfall pipes discharging within their service area. The results of their study were not available for inclusion in this report.

The Federal Water Pollution Control Administration-New Jersey State Department of Health surveys were carried out by boat and car. Boat surveys were conducted at or near low tide and discharge pipes were located, measured, sampled (if flowing) and identified as accurately as possible with prominent land marks, municipalities, streets or industrial plant names. Supplemental surveys were conducted by car in areas inaccessible by boat and also to substantiate and/or further clarify the boat observations. Visits were made to industrial plants and municipal city engineers' offices to verify field observations, particularly in complex urban and industrial park areas where visual identification of a discharge or pipe with a single source was difficult. Attempts were made to identify all outfall pipes, whether discharging an effluent or not, and regardless of the pollutional characteristics of the discharge.

Table 6 summarizes the identification, the observations and analytical results of samples taken during the surveys. Figure 13 and Maps 1 and 2 show the general location of each site where outfalls were found.

I might add here that I don't intend that this table is a complete list of outfalls to this area. I am sure there are many more that we were unable to find and identify in the short period of time in which we conducted our work.

At least 182 outfalls were found, at 76 site locations. Of this number, 120 pipes at 58 sites were observed discharging some quantity of wastewater during dry-weather periods. Sampling and/or observations indicate that some of these flowing outfalls discharge effluents of high temperature or high color, and contain appreciable BOD, suspended solids and bacteria. Based upon sampling, the BOD loading discharged is estimated to be 17,000 pounds per day, representing the raw discharge of an equivalent population of 100,000 persons. The suspended solids loading is estimated at 47,000 pounds per day.

It should be recognized that these organic and suspended solids loadings are for the time of sampling only and do not represent the total load that may be discharged from all the pipes observed. The total discharge load can only be determined by a thorough study including detailed visits to all industries and municipalities involved and a comprehensive sampling and analytical program.

Table 7 summarizes the Passaic River outfalls by type and municipal location. Of the 182 outfalls observed, 133 have been identified with industrial operations, 11 have been identified as major municipal combined sewer or stormwater overflows, and 38 identified as miscellaneous storm and surface runoff outlets. The larger industrial plants identified carry out chemical, metal, paint and rubber processing operations. The major combined storm sewers, located in Newark and Paterson, New Jersey, are suspected of receiving industrial wastewater flows. Efforts are continuing by the State of New Jersey and the Federal Water Pollution Control Administration to identify the sources of these flows.

Of the discharges listed in Table 6, the New Jersey State Department of Health, based on the results of sampling and surveillance activities, has issued pollution abatement orders to the following:

Passaic Valley Sewerage Commissioners, Newark, N. J.
Vulcan Materials, Newark, N. J.
Revere Smelting & Refining Company, Newark, N. J.
Celanese Chemical Company, Newark, N. J.

Essex Chemical Corporation, Newark, N. J.

City of Newark

Alcan Aluminum Corporation of America, Kearny, N. J.

Kramer Chemical Company, Kearny, N. J.

Interstate Soap Company, Newark, N. J.

Benjamin Moore Paint, Newark, N. J.

Public Service, Harrison, N. J.

Otis Elevator, Harrison, N. J.

Continued surveillance and sampling by the New Jersey State Department of Health and the Federal Water Pollution Control Administration may result in the issuance of additional State orders to municipalities and industries who are not conforming to State standards and regulations.

TABLE 6
DIRECT WASTE DISCHARGES
PASSAIC RIVER 1/

Map Ident. No.	Source Municipality	River 2/ Mile	Pipe Size	Est. Flow mgd	Temp. °C	BOD mg/1	Total Suspended Solids mg/1	pH	Total Coliform Org./100 ml	Fecal Coliform Org./100 ml	Remarks
1	Passaic Valley Sewerage Comm. 3/ 4/ Newark	0.1	undetermined	-	-	-	-	-	-	-	BOD = 241 mg/1 yellow color, odor
2	Vulcan Materials 3/ 4/ Newark	0.6	36", 6", 8"	-	-	-	-	-	-	-	High BOD, pH = 9.6 - 13.4
3	Ashland Chemical Co. 4/ Newark	1.1	3" 24"	-	-	-	-	-	-	-	Temp. >70°C Q = 0.05 mgd
4	Revere Smelting & Refining Co. 3/ 4/ Newark	1.1	Open ditch	-	-	-	-	-	-	-	BOD = >421 mg/1 Ether sol. = 14 mg/1 yellow color, pH = 2.7 Q = 0.25 mgd
5	Celanese Chemical Co. 3/ 4/ Newark	1.1	6"	-	-	-	-	-	-	-	BOD = >430 mg/1 Q = 0.25 mgd
6	Essex Chemical Corp. 3/ Newark	1.4	18", 18", 1 ", 15"	0.1	25.0	nil	[illegible]	6.5	$32x10^4$	$28x10^3$	BOD = <8.0 mg/1, pH = 8.2 4/
7	Roanoke Ave. Storm Sewer 3/ Newark	1.7	60"	1.90	[illegible]	740	1,230	6.7	$75x10^4$	$31x10^3$	Oil & chemical odor BOD = 382 mg/1, pH = 8.8 Ether sol. = 228 mg 1 Phenol = 1.5 ppm 4/
8	Western Electric Kearny	1.9	18", 18", 18", 21" other 10"	18" = .01 1 " = slight	25.0 -	nil -	[illegible] -	6.7 -	$26x10^3$ -	$22x10^2$ -	
9	Surface Runoff Kearny	2.1	48", 6", 18"	-	-	-	-	-	-	-	
10	Surface Runoff Kearny	2.1	12"	-	-	-	-	-	-	-	
11	Alcan Aluminum Corp. of America 3/ Kearny	2.2	4", 2", several other pipes 3"	4" = .01 2" = .02 -	42.0 44.0 -	2 7.4 -	42 60 -	7.7 7.6 -	10 10 -	4 4 -	Cr = 122 ppm Cn = 70 ppm pH = 4.3 4/
12	Storm Sewer 3/ Newark	2.5	1 ", 18"	-	-	-	-	-	-	-	
13	Kramer Chemical Co. 3/ Kearny	2.5	Flow through 8" hole in bulkhead	0.001	22.0	nil	580	12.0	10	4	
14	Monsanto Chemical Co. Kearny	2.7	27" with V notched weir	0.20	43.5	nil	68	8.8	$26x10^3$	$71x10^2$	
15	Public Service Essex Gen. Station Newark	2.8	20", very large outlet with gate	very large 28" ver lg.	33.0 38.5	nil 7.4	8 236	7.0 8.7	$38x10^4$ $21x10^3$	$60x10^2$ $40x10^2$	
16	Hudson County Mosquito Control Kearny	3.0	12"	large-under pressure	19.0	nil	312		$45x10^3$	40	
17	Commercial Solvents 4/ Newark	3.1	2"	-	-	-	-	-	-	-	
18	Blanchard Street Storm Sewer 3/ 4/ Newark	3.2	-	-	-	-	-	-	-	-	pH = 6.4

TABLE 6 (Cont'd.)

Map Ident. No.	Source Municipality	River 2/ Mile	Pipe Size	Est. Flow mgd	Temp. °C	BOD mg/1	Total Suspended Solids mg/1	pH	Total Coliform Org./100 ml	Fecal Coliform Org./100 ml	Remarks
19	Interstate Soap Co. 3/ 4/ Newark	3.3	Flow from under building	-	-	-	-		-	-	BOD = >420 mg/1, Ether sol. = 145 mg/1, pH = 5.8 suspended solids = 1104 mg/1
20	Lockwood Street Storm Sewer 3/ Newark	3.4	Undetermined size	-	-	-	-	-	-	-	
21	Benjamin Moore Paint 3/ Newark	3.4	60", 10"	60" = slight	2[illegible].5	18.2	1[illegible]	-	45x10⁴	38x10²	60" - BOD = 61 mg/1 pH = 7.7 4/
				10" = .01	21.[illegible]	nil	62	-	73x10²	16x10¹	10" - BOD = 183 mg/1 pH = 7.2 4/
22	Sherwin-Williams Newark	3.6	4"	[illegible]	30.2	nil	132	6.7	43x10⁴	90x10²	Colored discharge
			12"	[illegible]	2[illegible].0	nil	92	7.4	60x10³	41x10²	
			6"	0.6[illegible]	2[illegible].0	nil	132	7.0	71x10⁴	90x10²	
			6"x10" opening	0.12	36.0	63.[illegible]	140	7.0	86x10³	33x10²	
			7"	0.01	20.0	41.4	14	3.3	10	4	
			3"		-	-	-	-	-	-	
			1[illegible]"	-	-	-	-	-	-	-	
			several others	-	-	-	-	-	-	-	
23	Barth Smelting & Refining Co. 3/ Newark	4.0	10"	-	-	-	-	-	-	-	pH = 7.3, Ether sol. = 2.0 mg/1
24	Storm Sewer 3/ Newark	4.4	36"	-	-	-	-	-	-	-	
25	Mott Street Storm Sewer 3/ Newark	4.5	[illegible]1"	0.[illegible]	30.5	nil	2[illegible]	6.0	1[illegible]x10⁴	70x10²	
26	Storm Sewer from Ind. Area Harrison	4.6	6'x6'	-	-	-	-	-	-	-	pH = 6.5, Ether sol. = 160 mg/1 4/
27	Public Service 3/ Harrison	4.8	72"	Small	27.0	nil	164	6.8	62x10³	27x10²	Ether sol. = 363 mg/1 4/
28	Otis Elevator 3/ Harrison	5.2	18", 8", 6", small pipes	-	-	-	-	-		-	Pipes flowing samples could not be taken 8": Ether sol. = 699 mg/1 pH = 6.0 4/
29	NOPCO Harrison	5.6	4"	0.02	19.0	nil	4	-	24x10²	12x10¹	Colored discharge
			4"	0.003	20.5	74.0	8	-	10	4	
			4"	0.09	25.0	nil	132	-	99x10³	75x10²	
			12"	0.20	37.0	97.8	72	-	68x10³	51x10²	
			6"	0.88	24.5	nil	164	-	10x10⁴	11x10³	
			2½"	Large	24.0	nil	200	-	20x10⁴	17x10³	
			6"	0.08	37.0	nil	154	-	79x10³	65x10²	
30	Storm Sewer Harrison	6.1	15"		-	-	-	-	-	-	
31	Hillside Metal Products Newark	6.4	8"	0.01	21.0	3.8	50	6.0	30x10²	56x10¹	
			8"	0.05	37.0	5.8	60	3.5	39x10³	35x10²	
			6", other pipes	-	-	-	-	-	-	-	
32	Congoleum-Nairn, Inc. 4/ Kearny	7.1	4"	0.3	-	-	-	-	-	-	
33	Pittsburgh Plate Glass Co. Newark	7.3	2-36"	-	-	-	-	-	-	-	Pipes flowing samples could not be taken
			several other pipes		-	-	-	-	-	-	

TABLE 6 (Cont'd.)

Map Ident. No.	Source Municipality	River Mile 2/	Pipe Size	Est. Flow mgd	Temp. °C	BOD mg/1	Total Suspended Solids mg/1	pH	Total Coliform Org./100 ml	Fecal Coliform Org./100 ml	Remarks
34	Pettit Marine Paint (T) Belleville	9.8	24" 24" 24" 24"	0.06 0.04 0.03 0.03	19.6 19.3 19.0 19.0	5.4 3.8 4.8 3.4	28 26 24 26	7.6 7.8 7.6 7.4	83x10^3 73x10^3 20x10^4 19x10^4	11x10^3 13x10^3 13x10^3 90x10^2	Colored discharge
35	Storm Sewer Belleville	9.8	18"	0.04	22.0	nil	396	7.0	17x10^3	20x10^2	
36	Storm Sewer Belleville	9.9	24"	0.06	22.5	nil	784	7.0	56x10^3	60x10^2	
37	Storm Sewer Belleville	9.9	36"	Large	19.0	5.2	60	7.2	62x10^3	55x10^2	
38	Walter Kidde (T) Belleville	10.0	12" 12" 12"	0.04 0.12 0.42	26.0 26.0 26.0	nil 12 15.2	428 320 434	7.2 7.2 7.2	31x10^4 22x10^4 16x10^4	57x10^2 55x10^2 14x10^3	
39	Walter Kidde (T) Belleville	10.1	48"	Large	29.0	11.4	464	7.0	55x10^4	31x10^3	
40	Storm Sewer from Belleville Ind. Center Belleville	10.3	36"	0.16	23.0	nil	270	-	20x10^4	37x10^2	Oil on surface
41	Storm Sewer Nutley	11.1	24"	0.26	17.0	nil	16	8.0	71x10^3	23x10^1	
42	Storm Sewer (T) Clifton	12.9	48"	0.96	21.0	2.2	26	7.2	25x10^1	4	
43	Storm Sewer Passaic	14.1	36"	0.25	18.0	2.2	8	7.4	13x10^3	24x10^2	
44	PVSC Combined Overflow Passaic	14.4	48"	0.31	25.0	5.4	72	7.0	95x10^4	23x10^4	
45	Uniroyal, Inc. Passaic	14.6	8" 8" 8" 8" 24"	0.01 0.01 0.01 0.04 1.82	64.0 21.0 21.5 29.5 24.0	10.4 nil nil nil 3.1	192 280 186 14 88	10.5 7.4 7.0 7.5 7.1	10 20x10^1 20x10^3 52x10^3 47x10^2	4 4 32x10^1 12 28x10^1	Colored discharge
46	Storm Sewer Wallington	14.9	6"	-	-	-	-	-	-	-	
47	Parra Print Shop Passaic	15.1	4"	0.01	41.0	10.2	358	10.4	10	4	
48	J. L. Prescott Passaic	15.1	Several pipes	-	-	-	-	-	-	-	White color
49	Ind. Disc. to Dundee Canal (T) Passaic	14.4/0.25	Undetermined size	-	-	-	-	-	-	-	Pipes flowing sample could not be taken
50	Storm Sewer Passaic	15.3	24"	-	-	-	-	-	-	-	
51	Storm Sewer Garfield	15.9	Undetermined size	-	-	-	-	-	-	-	
52	Storm Sewer Passaic	16.0	Undetermined size	-	-	-	-	-	-	-	

TABLE 6 (Cont'd.)

Map Ident. No.	Source Municipality	River 2/ Mile	Pipe Size	Est. Flow mgd	Temp. °C	BOD mg/1	Total Suspended Solids mg/1	pH	Total Coliform Org./100 ml	Fecal Coliform Org./100 ml	Remarks
53	**Storm Sewer** **Passaic**	16.0	27"	Medium	24.0	120	150	-	> 80x10^{4}	> 30x10^{3}	Sewage appearing effluent
54	**Storm Sewer** **Passaic**	16.2	18"	Small	-	-	-	-	-	-	Sample could not be taken
55	**Tenneco Chemicals** **Heyden Division** **Garfield**	16.2	12" 13" 22" 24"	Large 0.01 Large Large	32.0 22.0 36.0 36.0	154 9.2 103 29.5	276 234 194 198	- - - -	17x10^{5} 40x10^{5} 60x10^{5} 33x10^{5}	17x10^{4} 35x10^{4} 35x10^{4} 26x10^{4}	May contain detergent, Dead fish in outfalls
56	**Storm Drain** **Garfield**	16.5	2"	-	-	-	-	-	-	-	
57	**Whippany Paper-Clifton Mills** **Clifton**	17.1	12", outfall **w/gate**	0.01	26.0	2.8	106	-	15x10^{5}	22x10^{4}	
58	**Route 80 Storm Sewer** **Garfield**	19.1	30" corregated steel outfall	-	-	-	-	-	-	-	
59	**19th Street Storm Sewer** **Paterson**	19.7	84"	0.02	21.0	4.3	40	7.5	64x10^{1}	15x10^{1}	
60	**Eastern Machine Co.** **Paterson**	21.0	8"	-	-	-	-	-	-	-	
61	**Storm Sewer** **Fair Lawn**	21.8	24"	0.32	19.0	nil	10	7.4	80x10^{4}	30x10^{3}	
62	**Bergen County Storm Sewer** **Fair Lawn**	21.8	24" 10"	- -	- -	- -	- -	- -	- -	- -	
63	**3rd Avenue Overflow** **Paterson**	22.0	36"	-	-	-	-	-	-	-	Colored discharge
64	**Bergen County Storm Sewer** **Fair Lawn**	22.3	24"	0.08	29.0	nil	36	7.4	46x10^{1}	44	
65	**1st Avenue Storm Sewer** **Paterson**	22.3	24", 30"	-	-	-	-	-	-	-	White material in discharge
66	**Storm Sewer from Fair Lawn Ind.** **Fair Lawn**	22.3	4'-4' opening	-	-	-	-	-	-	-	
67	**Storm Sewer** **Fair Lawn**	22.5	3 pipes of Undetermined size	-	-	-	-	-	-	-	
68	**Continental Piece Dyeing & Finishing Co.** **Paterson**	22.5	2-2"	0.002	> 50.0	1.4	30	-	10	4	Oil on bank
69	**Storm Sewer** **Prospect Park**	23.7	2-36"	-	-	-	-	-	-	-	
70	**Storm Sewer** **Prospect Park**	23.7	18"	-	-	-	-	-	-	-	Oil stain in pipe
71	**Associated Dye & Print Co.** **Paterson**	23.7	6" 3" Undetermined size	0.03 very large .24	> 50.0 > 50.0 -	1.8 9.7 92.0	16 104 270	- - 7.8	20 10 28x10^{3}	4 4 11x10^{3}	Colored discharge

TABLE 6 (Cont'd.)

Map Ident. No.	Source Municipality	River[2/] Mile	Pipe Size	Est. Flow mgd	Temp. °C	BOD mg/l	Total Suspended Solids mg/l	pH	Total Coliform Org./100 ml	Fecal Coliform Org./100 ml	Remarks
72	Witco Chemical Co. Paterson	24.0	2-4"	-	-	-	-	-	-	-	
73	Leon Street Storm Sewer (PVSC Overflows) Paterson	24.0	18"	0.01	30.5	98.7	450	7.7	$11x10^4$	$29x10^3$	
74	Public Service Paterson	24.2	8 pipes of varying sizes	-	-	-	-	-	-	-	Pipes flowing, samples could not be taken
75	Storm Sewer Paterson	26.6	30"	-	-	-	-	-	-	-	
76	Storm Sewer West Paterson	27.0	36", 12", 48"	-	-	-	-	-	-	-	

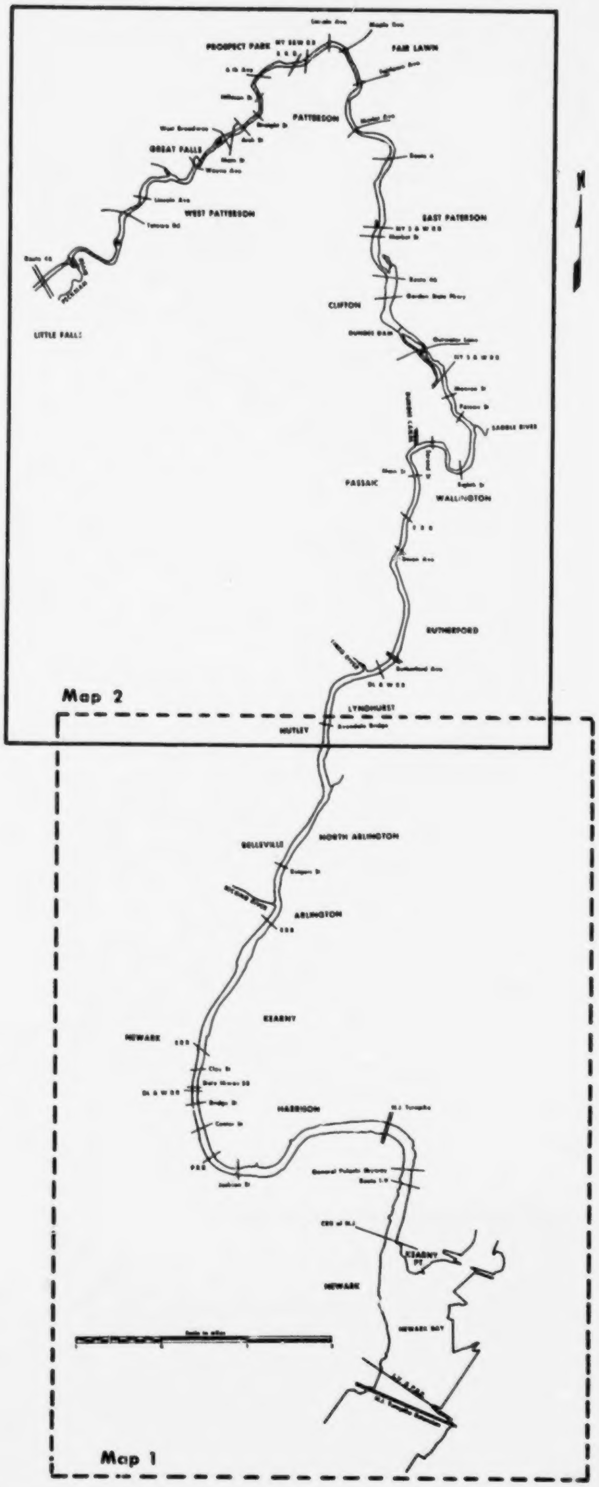
1/ Data contained in this Table have been obtained from the Federal Water Pollution Control Administration and New Jersey State Department of Health surveys conducted during June-November, 1969.

2/ River mile measured from mouth of River at Newark Bay (Buoy RN 24).

3/ Waste source under pollution abatement orders issued by the New Jersey State Department of Health.

4/ New Jersey State Department of Health data.

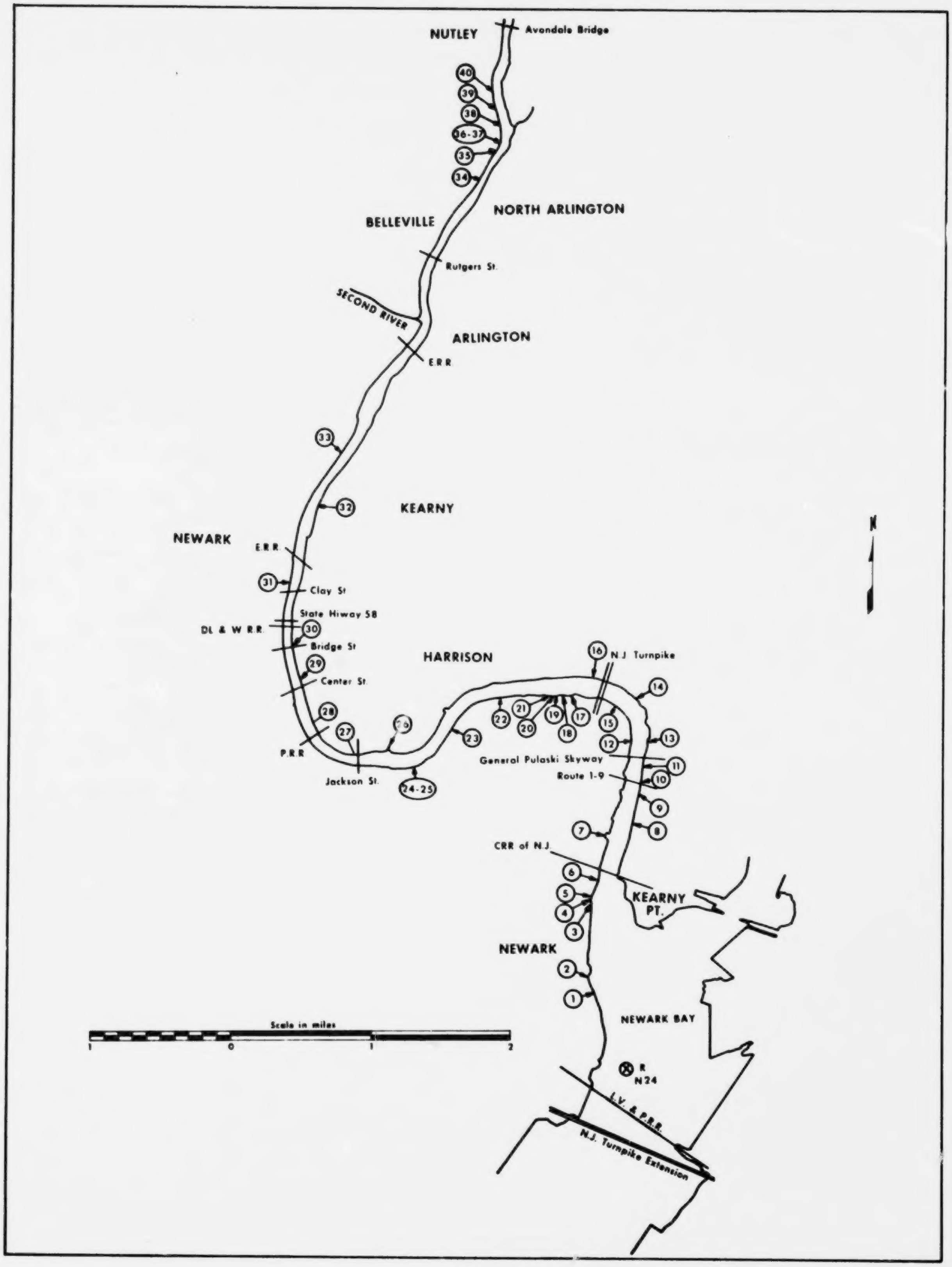
(T) Tentatively identified sources.



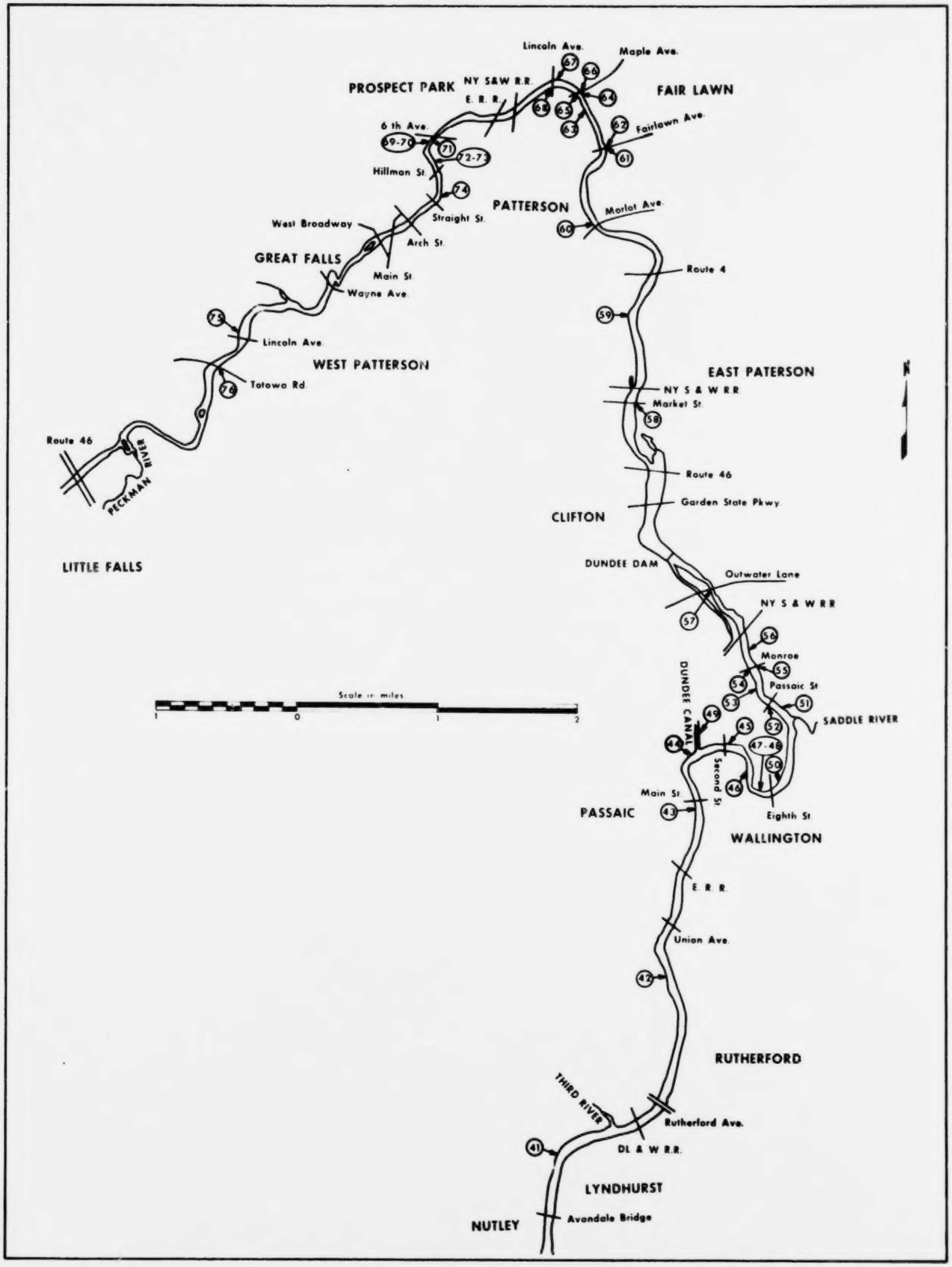
PASSAIC RIVER
DIRECT WASTE DISCHARGE
MUNICIPAL AND INDUSTRIAL

PROSPECT PARK
FAIR LAWN
PATTERSON
GREAT FALLS
WEST PATTERSON
LITTLE FALLS
EAST PATERSON
CLIFTON
DUNDEE DAM
SADDLE RIVER
PASSAIC
WALLINGTON
RUTHERFORD
Map 2
LYNDHURST
NUTLEY
BELLEVILLE
NORTH ARLINGTON
ARLINGTON
KEARNY
NEWARK
HARRISON
KEARNY PT
NEWARK
NEWARK BAY
Map 1
N

Figure 13


NUTLEY
Avondale Bridge
40
39
38
36-37
35
34
BELLEVILLE
NORTH ARLINGTON
Rutgers St.
SECOND RIVER
ARLINGTON
E.R.R.
33
32
KEARNY
NEWARK
E.R.R.
31
Clay St
State Hiway 58
DL & W R.R.
30
Bridge St
HARRISON
29
Center St.
28
P.R.R.
27
26
Jackson St.
24-25
23
22
21
20
19
18
17
16
N.J. Turnpike
15
14
13
12
11
10
9
8
7
General Pulaski Skyway
Route 1-9
CRR of N.J.
6
5
4
3
KEARNY PT.
NEWARK
2
1
NEWARK BAY
R
N24
L.V. & P.R.R.
N.J. Turnpike Extension
Scale in miles
1
0
1
2
N

Map 1


Lincoln Ave.
Maple Ave.
PROSPECT PARK
NY S&W R.R.
E. R. R.
FAIR LAWN
67
66
68
65
64
63
62
Fairlawn Ave.
61
6 th Ave.
69-70
71
72-73
Hillman St.
74
PATTERSON
Morlot Ave.
60
Straight St.
West Broadway
Arch St.
GREAT FALLS
Main St.
Wayne Ave.
Route 4
75
Lincoln Ave.
59
WEST PATTERSON
Totowa Rd.
76
EAST PATERSON
NY S & W R.R.
Market St.
58
Route 46
PECKMAN RIVER
Route 46
Garden State Pkwy.
CLIFTON
LITTLE FALLS
DUNDEE DAM
Outwater Lane
57
NY S & W R R
56
Monroe
55
54
Passaic St
53
51
DUNDEE CANAL
SADDLE RIVER
49
45
52
Scale in miles
1
0
1
2
44
47-48
50
Second St
46
Main St.
PASSAIC
43
Eighth St.
WALLINGTON
E. R. R.
Union Ave.
42
RUTHERFORD
THIRD RIVER
Rutherford Ave.
41
DL & W R.R.
LYNDHURST
NUTLEY
Avondale Bridge

Map 2

TABLE 7

DIRECT WASTE DISCHARGES BY
TYPE AND MUNICIPALITY
PASSAIC RIVER

Municipality	No. of Sites	Total No. of Pipes	No. of Sites with Flowing Pipes	Number of Pipes from Industry	Number of Major Storm Sewers or Overflows	Number of Miscellaneous Storm Sewers and Surface Drains
Newark	20	49	16	41	5	3
Kearny	8	38	7	33	-	5
Belleville	7	12	7	9	-	3
Harrison	5	18	4	17	-	1
Nutley	1	1	1	-	-	1
Wallington	1	1	-	-	-	1
Passaic	10	16	10	10	1	5
Clifton	2	3	2	2	-	1
Garfield	4	8	2	4	-	4
Paterson	10	22	7	16	5	1
Fair Lawn	5	8	2	1	-	7
West Paterson	1	3	-	-	-	3
Prospect Park	2	3	-	-	-	3
Total	76	182	58	133	11	38

A. W. Bromberg

Mr. Chairman, I now refer you to Roman Numeral Page vii in the front of this report for our summary, conclusions and recommendations.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

SUMMARY

1. Section 10 of the Federal Water Pollution Control Act, as amended, authorizes the Secretary of the Interior to call a conference regarding the pollution of interstate waters if requested to do so by the Governor of a State, or when, on the basis of reports, surveys, or studies, the Secretary has reason to believe that pollution of interstate waters is endangering the health or welfare of persons in a State other than that in which the discharge or discharges originate.

2. The first session of the Hudson River conference was held in September 1965, at the request of the Governors of New York and New Jersey. Subsequent sessions, to review compliance with initial conference recommendations and discuss new problems, were held in September 1967 and June 1969. Recommendations of the conference as approved by the Secretary state in part that,

> "...All wastes prior to discharge into the waters covered by the conference (a) shall be treated to provide a minimum of 80 percent reduction of biochemical oxygen demand at all times. It is recognized that this will require a design for an average removal of 90 percent of biochemical oxygen demand. Or (b) shall be treated, as approved by the State Water Pollution Control Agency, to the degree necessary to meet the water quality standards approved by the Secretary of the Interior under the Water Quality Act of 1965. All the waters covered by the conference shall receive effective disinfection of the effluents as required to protect water uses..."

and,

> "...the following time schedule for the foregoing remedial program: a) designs for remedial facilities completed by January 1, 1967; b) financing arrangements completed by April 1, 1967; c) construction started by July 1, 1967; d) construction completed and plants placed into operation by January 1, 1970...".

The complete recommendations of the Secretary for the first and second sessions and the recommendations to the Secretary by the conferees for the third session are contained in the Appendix of this report.

3. At the June 1969 session, preliminary reports were presented by the Federal Water Pollution Control Administration regarding the operation of the Passaic Valley Sewerage Commissioners' waste treatment facility, direct discharges to the Lower Passaic River and the effect of the direct discharges on water quality in the Lower Passaic River. Since that session, additional studies have been conducted by the Federal Water Pollution Control Administration to evaluate the operational efficiency of the Passaic Valley Sewerage Commissioners' waste treatment facility and the effect of its effluent on the water quality of the Upper and Lower Bays of New York Harbor. Studies were also conducted by the Federal Water Pollution Control Administration and the New Jersey State Department of Health to identify waste discharges to and evaluate the water quality of the Lower Passaic River.

CONCLUSIONS

It is concluded that:

1. The quality of the interstate waters of the Upper and Lower Bays of New York Harbor and the Passaic River is below that required by the approved Federal-State Water Quality Standards. In the interstate waters of New Jersey,

the present standards prescribe the highest use as follows: in the Upper Bay -- limited recreation and fish survival and in the Passaic River upstream to the head of tide-fish survival. In the interstate waters of New York, the present standards prescribe the highest use as follows: in the Lower Bay -- bathing and in the Upper Bay -- fishing.

2. The quality of water in the Upper and Lower Bays of New York Harbor is affected by the discharge of inadequately treated waste from Passaic Valley Sewerage Commissioners and other discharges originating in the New Jersey-New York City metropolitan area.

3. As a result of inadequately treated wastes originating in Upper Bay of New York Harbor, a public health hazard exists in the waters of Lower Bay which are classified for recreational purposes. Pathogenic organisms have been isolated in the effluent of the Passaic Valley Sewerage Commissioners, in the waters of Upper Bay of New York Harbor, in the vicinity of Passaic Valley Sewerage Commissioners' dispersal field and in the waters off the bathing beaches of the Lower Bay of New York Harbor.

4. Most of the municipalities and industries in the conference area are moving to meet the conference recommendations.

5. The Passaic Valley Sewerage Commissioners have

not initiated adequate action to comply with the conference recommendations for needed treatment facilities.

6. Court action against the Passaic Valley Sewerage Commissioners for not complying with New Jersey treatment requirements was initiated in 1967 by the New Jersey State Department of Health. The Chancery Division of the Superior Court and the Appellate Division of the Superior Court upheld the Department orders in dealing with the quality of effluent discharges from the Commissioners' facility.

7. The enforcement responsibilities of Passaic Valley Sewerage Commissioners to maintain the quality of the Passaic River as prescribed by the enabling legislation are not being carried out.

8. Industrial and untreated municipal waste discharges are degrading the quality of water in the Passaic River.

RECOMMENDATIONS

It is recommended that:

1. The Passaic Valley Sewerage Commissioners and others cited by the State of New Jersey take necessary action without delay to comply with the administrative orders issued by the State of New Jersey and with the previous recommendations of this conference.

2. The Passaic Valley Sewerage Commissioners take necessary steps to insure that present and future pollutional sources in the service area of the Commissioners utilize the regional treatment facilities completely for final disposal of wastes.

3. The Passaic Valley Sewerage Commissioners provide a minimum of 80 percent reduction of biochemical oxygen demand at all times for all wastewater in accordance with the schedule established by the conference. This requires a design for an average reduction of 90 percent of biochemical oxygen demand as required by the recommendations of the Hudson River Conference. As an immediate measure, effective chlorination, in accordance with State requirements, be provided to reduce the health hazards from the Passaic Valley Sewerage Commissioners' effluent in the Upper and Lower Bays of New York Harbor.

4. Municipalities in the Passaic Valley Sewerage Commissioners' district take remedial action to eliminate illegal pollution discharges to storm sewers.

5. The Passaic Valley Sewerage Commissioners and the municipalities improve the present method of controlling combined sewer overflows in their sewer system. A tentative plan and time schedule should be submitted in 6 months. Existing manually operated bypass valves be replaced by an automatic regulating system within one year.

Mr. Chairman, this concludes our presentation.

BIBLIOGRAPHY

1. New Jersey Statutes Annotated, Title 58, Chapter 14, Sections 1 to 34, pertaining to the Passaic Valley Sewerage Commissioners (1907).

2. New York vs New Jersey, Chapter 217 United States Supreme Court reports, page 606, Federal stipulation between the Secretary of War and the Passaic Valley Sewerage Commissioners (October, 1909).

3. Passaic Valley Sewerage Commissioners - Contracts with Municipalities (May 15, 1911, September 20, 1911, June 1, 1917, March 27, 1918, July 29, 1921, February 23, 1922, November 19, 1924, January 13, 1925, October 26, 1926, October 21, 1942).

4. New Jersey Statutes Annotated, Title 26, Chapter 2E, Section 1. Public Sanitary Sewerage Facilities Act (1965).

5. Revised Statutes, Title 58, Chapter 12, Section 2. Pertaining to the regulatory power of the New Jersey State Health Department.

6. New Jersey vs Passaic Valley Sewerage Commissioners, Chapter 100 New Jersey Superior Court Reports, page 540 (May, 1968).

7. Testimony from a hearing conducted by the Legislative Committee on Air Pollution, Water Pollution and Public Health (July, 1969).

8. Report on Improving Sedimentation and Dispersal Facilities, Bogert-Childs Engineering Associates, New York, New York (1951).

9. Critical Situation as to Steam Power Newark Bay Pumping Station, Bogert-Childs Engineering Associates, New York, New York (March 12, 1952).

10. Report on Repairs, Replacement and Improvements at New Bay Pumping Station, Passaic Valley Sewerage Commissioners, Bogert-Childs Engineering Associates, New York, New York, Appendix B and Page 17 (1954).

11. Report on Improvements to Sewage Treatment Facilities at the Newark Bay Pumping Station, Phases I, II, and III, Metcalf and Eddy Engineers, Boston, Massachusetts (1960).

12. Report on Proposed Chlorination Facilities, Manganaro, Martin and Lincoln, Consulting Engineers, New York, New York (April, 1967).

13. Report on Proposed Head-End Facilities, Manganaro, Martin and Lincoln, New York, New York (December, 1968).

14. Water Supply and Wastewater Disposal, Fair and Geyer, Eighth Printing (1967).

15. Recommended Standards for Sewage Works, Great Lakes - Upper Mississippi River Board of State Sanitary Engineers (1968 Edition).

16. Report for the Conference on Pollution of Raritan Bay and Adjacent Interstate Waters, Federal Water Pollution Control Administration, Northeast Region-Raritan Bay Project May, 1967.

APPENDIX A

SUMMARY OF CONFERENCE
(First Session)

POLLUTION OF THE INTERSTATE WATERS

OF THE

HUDSON RIVER
AND ITS TRIBUTARIES
(NEW YORK-NEW JERSEY)

September 28-30, 1965

In accordance with requests from Nelson A. Rockefeller, Governor of New York, and Richard J. Hughes, Governor of New Jersey, and on the basis of reports, surveys, or studies, the Secretary of Health, Education, and Welfare on September 1, 1965, called a conference under the provisions of section 8 of the Federal Water Pollution Control Act (33 U.S.C. 466 et seq.) in the matter of pollution of the interstate waters of the Hudson River and its tributaries. The conference was held September 28 through 30, 1965, at the Waldorf Astoria Hotel, New York, New York.

The 158 mile reach of the Hudson River considered at the conference encompasses the Upper Bay of New York Harbor, including Newark Bay, the Kill Van Kull, the East and Harlem Rivers, and the main stem of the Hudson River from the Battery to the head of navigation at the Federal Lock at Troy, New York.

The following conferees representing the State water pollution control agencies of New York and New Jersey, the Interstate Sanitation

Commission, and the U. S. Department of Health, Education, and Welfare, participated in the conference:

Robert D. Hennigan	Director, Bureau of Water Resources Services New York State Department of Health Albany, New York
Roscoe P. Kandle, M.D.	State Commissioner of Health New Jersey State Department of Health Trenton, New Jersey
Alfred Fletcher	Chief Engineer New Jersey State Department of Health Trenton, New Jersey
E. Powers Mincher	Counsel New Jersey State Department of Health Trenton, New Jersey
Thomas R. Glenn, Jr.	Director and Chief Engineer Interstate Sanitation Commission New York, New York
Earl J. Anderson	U. S. Department of Health, Education, & Welfare New York, New York
Murray Stein, Chairman	U. S. Department of Health, Education, & Welfare Washington, D. C.

The Honorable John W. Gardner, Secretary of Health, Education, and Welfare, presented a statement concerning Federal-State responsibilities and programs for abatement of pollution of the Hudson River.

The following also participated in the conference:

Mark Abelson	Northeast Regional Coordinator U. S. Department of the Interior Boston, Massachusetts

Colonel Richard T. Batson	District Engineer U. S. Army Engineer District New York, New York
Lester Blaschke	Chief, Office of Estuarine Surveillance & Sanitary Control Division of Environmental Engineering and Food Protection U. S. Public Health Service Washington, D. C.
Russell D. Butcher	Conservation Specialist National Audubon Society New York, New York
Honorable Clifford P. Case (by Gar Kaganowich)	United States Senate Washington, D. C.
Dr. Natale Colosi	Chairman, Interstate Sanitation Commission New York, New York
H. Jackson Davis, M.D.	Commissioner of Health Rensselaer County Troy, New York
Paul DeFalco, Jr.	Director, Hudson-Champlain and Metropolitan Coastal Water Pollution Control Project U. S. Department of Health, Education, & Welfare Metuchen, New Jersey
Stephen G. Doig, Jr.	County Attorney Rockland County New York, New York
Honorable John Dow	Congressman, 27th District, New York House of Representatives Washington, D. C.
Mrs. Kenneth Greenawalt	President, League of Women Voters New York, New York
Alan Gussow	Citizens Committee for the Hudson River Congress, New York

Richard M. Greening	Regional Hydrologist, Weather Bureau Environmental Science Services Administration New York, New York
Hollis S. Ingraham, M.D.	Commissioner of Health New York State Department of Health Albany, New York
Honorable Jacob K. Javits (by Miss Patricia Connell)	United States Senate Washington, D. C.
Honorable Robert F. Kennedy	United States Senate Washington, D. C.
Honorable John V. Lindsay (by Murray Stein)	Congressman 17th District, New York House of Representatives Washington, D. C.
Donald E. Lynch	Executive Director Citizens Committee for Clean Water New York, New York
Honorable Edwin G. Michaelian	County Executive Westchester County White Plains, New York
Olin T. Mirteenes	District Ship Custody Officer Maritime Administration U. S. Department of Commerce New York, New York
Eugene H. Nickerson	Nassau County Executive Nassau County, New York
William Henry Osborn	President, Hudson River Conservation Society New York, New York
Honorable Richard L. Ottinger	Congressman, 25th District, New York House of Representatives Washington, D. C.
Brigadier General David S. Parker	Division Engineer, North Atlantic Division Corps of Engineers New York, New York

Mrs. Helen Putnam	Friends of the Hudson New York, New York
Honorable Ogden R. Reid	Congressman, 26th District, New York House of Representatives Washington, D. C.
Honorable Joseph Y. Resnick (by John W. Logan)	Congressman, 28th District, New York House of Representatives Washington, D. C.
Honorable Nelson A. Rockefeller	Governor, State of New York State Capitol Albany, New York
Ronald W. Spevack	Assistant State Chairman New Jersey State Jaycees
Dr. Clarence M. Tarzwell	Director, National Marine Quality Laboratory U. S. Public Health Service Wakefield, Rhode Island
Gwyn Thomas	Executive Assistant to the President Associated Industries of New York State, Inc. Albany, New York
Honorable Robert F. Wagner	Mayor, City of New York New York, New York
Mrs. John Wallace	New York State Congress of Parents and Teachers, Inc. Garden City, New York
Dr. Harold G. Wilm	Conservation Commissioner Chairman, New York State Water Resources Commission Albany, New York
Rod Vandivert	Scenic Hudson Preservation Council New York, New York

The Chairman of the conference pointed out that:

1. Under the Federal Water Pollution Control Act (33 U.S.C. 466 et seq.), pollution of interstate waters which endangers the health or welfare of persons in a State other than that in which the discharges originate is subject to abatement under procedures described in section 8 of the Federal Act.
2. The first step of this procedure is the calling of a conference.
3. The purpose of this conference is to bring together representatives of the State and interstate water pollution control agencies and the U. S. Department of Health, Education, and Welfare, to review the existing situation and the progress which has been made, to lay a basis for future action by all parties concerned, and to give the States, localities, and industries an opportunity to take any indicated remedial action under State and local law.

Conferees representing the New York State Department of Health, the New Jersey State Department of Health, the Interstate Sanitation Commission, and the U. S. Department of Health, Education, and Welfare were present throughout the conference.

Representatives of the Department of Health, Education, and Welfare, presented a report on the Hudson River and its tributaries which covered sources of pollution, types of wastes discharged, and interferences with water uses.

Representatives of the New York State Department of Health, the New Jersey State Department of Health, and the Interstate Sanitation Commission presented statements concerning water quality in the Hudson River and its tributaries.

The conferees agreed upon the following conclusions and recommendations:

1. The Hudson River and its tributaries, considered by this conference, are interstate waters within the meaning of the Federal Water Pollution Control Act.
2. There is interstate pollution of these waters. This pollution is subject to abatement under the Federal Water Pollution Control Act.
3. Such pollution is caused by many factors including sewage and industrial waste discharges, oil, silt, sediment, heat, floating solids, nutrients, sludge deposits, and combined sewer overflows. Sources of pollution are in both New Jersey and New York.
4. This pollution interferes with recreation, commercial fishing, sport fishing, navigation, domestic and industrial water supplies, and esthetic values.
5. The States of New Jersey and New York and the Interstate Sanitation Commission are empowered to abate pollution and have active programs to accomplish this result. These programs include: establishment of water quality requirements; enforcement actions to abate waste discharges; development of comprehensive water pollution control programs; and fiscal incentives.

6. Delays in abating pollution are caused by the lack of adequate treatment facilities and the complex technical and financial problems presented by the use of a waterway serving the largest metropolitan area in the country.
7. Cognizance is taken of the activities of the U. S. Army Corps of Engineers and the Coast Guard in abating pollution resulting from oil, sludge, silt and floating debris, as well as the program of the Federal Government to abate pollution from all Federal installations.

The Department of Health, Education, and Welfare shall advise and consult with other Federal Agencies in the area covered by the conference to see that all Federal installations install, construct and operate adequate pollution control facilities which will meet the requirements of the States and the Interstate agency concerned, as well as the Federal Government.

The States and Interstate agency recognize that the Department of Health, Education, and Welfare is the Federal agency primarily charged with abatement of pollution of interstate or navigable waters. They recommend that the Department take the lead in coordinating the activities of all Federal agencies concerned with water quality in the Hudson River and its tributaries so that the Federal Government may have a unified approach in dealing with the States and Interstate agencies.

8. The benefits which would result from increased State water pollution control activities under such programs as the proposed $1 billion "Pure Water" Bond Issue in New York State are acknowledged.
9. All discharge sources to the Hudson River and its tributaries, whether public, Federal installations, or industrial, shall receive a minumum of secondary treatment or its equivalent, and effective disinfection of the effluents as required to protect water uses.
10. Industrial plants shall improve practices for the segregation and treatment of wastes to effect the maximum reduction of the following:
    a) Acids and alkalies;
    b) Oil and tarry substances;
    c) Phenolic compounds and organic compounds that contribute to taste and odor problems;
    d) Nutrient materials including ammonia and nitrogenous phosphoric compounds;
    e) Suspended material;
    f) Toxic and highly colored wastes;
    g) Oxygen requiring substances;
    h) Heat;
    i) Foam producing discharges;
    j) Other wastes which detract from recreational uses, esthetic enjoyment or other beneficial uses of the waters.
11. Surveillance and monitoring of the operation and maintenance of sewage

and waste treatment facilities in the conference area shall be conducted by the States of New Jersey and New York, the Interstate Sanitation Commission, and the Department of Health, Education, and Welfare at locations and frequencies to yield reliable values of waste outputs and resulting receiving water quality, and to show their variations.

12. The Federal conferee recommends the following time schedule for the foregoing remedial program:

    a) Designs for remedial facilities completed by January 1, 1967;

    b) Financing arrangements completed by April 1, 1967;

    c) Construction started by July 1, 1967;

    d) Construction completed and plants placed into operation by January 1, 1970;

    e) Commensurate schedules to be adopted for the interception and treatment of industrial wastes and wastes from Federal installations;

    f) Existing schedules calling for earlier completion dates are to be met.

13. The magnitude of the pollution problem caused by discharges from combined sewer overflows is recognized. The Department of Health, Education, and Welfare, in cooperation with the States of New Jersey, New York, and the Interstate Sanitation Commission, will undertake a review of the problem and develop a program for action for consideration by the Federal Government, the States and the Interstate Sanitation Commission by December 31, 1968.

The construction of combined sewer systems in newly developed or redeveloped urban areas shall be prohibited, and existing combined sewers shall be eliminated wherever feasible.

Programs shall be established for surveillance of existing combined sewer systems and flow regulating structures to convey the maximum practicable amount of combined flows to and through treatment plants.

14. The conferees representing New Jersey, New York and the Interstate Sanitation Commission call attention to the fact that financing is the key to sewage treatment plant construction. In the past, the financial burden for construction of sewage treatment facilities has been borne by municipalities and industry. This method of financing must be changed if the progress visualized in this conference is to be achieved.

15. Regional planning is often the most logical and economical approach towards meeting water pollution problems. The water pollution control agencies of New Jersey, New York, and the Interstate Sanitation Commission, and the Department of Health, Education, and Welfare, will encourage such regional planning activities.

SUMMARY OF CONFERENCE
(SECOND SESSION)

POLLUTION OF INTERSTATE WATERS OF THE HUDSON RIVER AND ITS TRIBUTARIES

(NEW YORK-NEW JERSEY)

September 20, 1967

The second session of the conference in the matter of pollution of the interstate waters of the Hudson River and its tributaries (New York-New Jersey) was held on September 20, 1967, at New York, New York, under the provisions of section 10 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 466 et seq.). The first session of the conference was held on September 28-30, 1965, at New York City.

The 158 mile reach of the Hudson River considered at the conference encompasses the Upper Bay of New York Harbor, including Newark Bay, the Kill Van Kull, the East and Harlem Rivers, and the main stem of the Hudson River from the Battery to the head of navigation at the Federal Lock at Troy, New York.

The following conferees representing the State water pollution control agencies of New York and New Jersey, the Interstate Sanitation Commission, and the U. S. Department of the Interior, participated in the conference:

Dwight F. Metzler	Deputy Commissioner New York State Department of Health Albany, New York

Roscoe P. Kandle, M.D.	Commissioner New Jersey State Department of Health Trenton, New Jersey
Thomas R. Glenn, Jr.	Director and Chief Engineer Interstate Sanitation Commission New York, New York
Lester M. Klashman	U. S. Department of the Interior Federal Water Pollution Control Administration Boston, Massachusetts
Murray Stein, Chairman	U. S. Department of the Interior Federal Water Pollution Control Administration Washington, D. C.

Also participating in the conference were the following:

Colonel R. T. Batson	District Engineer U. S. Army, Corps of Engineers New York, New York
Dr. Natale Colosi	Chairman, Interstate Sanitation Commission New York, New York
Dr. H. Jackson Davis (Represented by Carl Stefanic)	Commissioner of Health Rensselaer County Troy, New York
Paul DeFalco, Jr.	U. S. Department of the Interior Federal Water Pollution Control Administration Metuchen, New Jersey
Honorable Joseph A. Fusco (Represented by Alan Blake)	Assemblyman, 86th Assembly District Bronx County, New York
Arthur Handley	Division of Pure Water New York State Department of Health Albany, New York
James Harding	Division of Pure Water Westchester County, New York

Eugene E. Hult	Commissioner of Public Works New York, New York
Honorable Jacob K. Javits (Represented by Emil Frankel)	United States Senate Washington, D. C.
C. C. Johnson	Environmental Health Services New York City Health Department New York, New York
Richard W. Keeler	Rensselaer County Agency for Abatement and Control of Pollution Troy, New York
Honorable Robert F. Kennedy (Represented by Robert Green)	United States Senate Washington, D. C.
Dr. John A. Lyons	Albany County Sewer Agency Albany County, New York
Lawrence J. McCarren	General Services Administration New York, New York
James E. McShane	Maritime Administration U. S. Department of Commerce New York, New York
Honorable Frank D. O'Connor (Represented by James F. O'Donnell)	President, New York City Council New York, New York
William Lathrop Rich	Committee for the New York-Montreal Seaway New York, New York
Honorable Nelson A. Rockefeller	Governor, State of New York State Capitol Albany, New York
Honorable Whitney North Seymour, Jr.	State Senator, 26th District State of New York
William K. Shaffer	Division of Pure Waters New York State Department of Health Albany, New York
Honorable John H. Warden	Mayor, City of Rensselaer Rensselaer, New York

The Chairman of the conference pointed out that:

1. Under the Federal Water Pollution Control Act, as amended (33 U.S.C. 466 et seq.), pollution of interstate or navigable waters which endangers the health or welfare of any persons is subject to abatement under procedures described in section 10 of the Federal Act.

2. The first step of these procedures is the calling of a conference.

3. The purpose of the conference is to bring together representatives of the States, the interstate agency, and the U. S. Department of the Interior to review the existing situation and the progress which has been made, to lay a basis for future action by all parties concerned, and to give the States, localities, and industries an opportunity to take any remedial action which may be indicated, under State and local law.

4. The first session of the conference was held on September 28-30, 1965, in accordance with requests from the Honorable Nelson A. Rockefeller, Governor of New York, and the Honorable Richard J. Hughes, Governor of New Jersey, and on the basis of reports, surveys, or studies under the provisions of the Federal Water Pollution Control Act. At the first session, the conferees recommended a remedial program for pollution abatement. Subsequent to the conference, the Secretary recommended a time schedule for implementation of the remedial program.

5. The second session of the conference was called for the purpose of reviewing compliance with the recommended schedule of remedial action.

At the second session the conferees agreed upon the following conclusions and recommendations:

1. Pollution of the interstate waters of the Hudson River and its tributaries is occurring due to the discharge of inadequately treated municipal and industrial wastes.

2. Considerable progress has been made toward abating this pollution problem and the programs underway, when carried to their logical conclusion, will abate and control this pollution.

3. All wastes prior to discharge into the waters covered by the conference (a) shall be treated to provide a minimum of 80% reduction of biochemical oxygen demand at all times. It is recognized that this will require a design for an average removal of 90% of biochemical oxygen demand. Or (b) shall be treated, as approved by the State water pollution control agency, to the degree necessary to meet the water quality standards approved by the Secretary of the Interior under the Water Quality Act of 1965.

4. All the waters covered by the conference shall receive effective disinfection of the effluents as required to protect water uses.

5. The conferees agree that all remedial facilities will be placed in operation by 1970 except the proposed North River facility which cannot be completed and in operation until 1972.

6. The State and interstate conferees agree that recent actions in Congress make it appear that the Fiscal Year 1968 appropriations will be less than one-half the inadequate authorization of $450 million. It is destructive of pollution control efforts to continue

a system in which actual appropriations are far below statutory authorizations. It should be understood that congressionally authorized amounts constitute a serious moral obligation on which States and municipalities should be able to rely in planning their projects for water quality improvement. Unless congressional appropriations are reasonably consistent with the authorizations enacted by Congress, it is obviously impossible for any municipality to receive the 55% of construction cost in Federal aid clearly provided in the Clean Water Restoration Act of 1966. If the Congress intends to fund projects 55%, then increases in the existing authorizations, as well as increases in the appropriations are needed.

7. Periodic progress meetings shall be called by the chairman after consultation with the conferees.

CONCLUSIONS AND RECOMMENDATIONS
OF THE
CONFEREES
(THIRD SESSION)

POLLUTION OF INTERSTATE WATERS
OF THE
HUDSON RIVER AND ITS TRIBUTARIES

(NEW YORK-NEW JERSEY)

June 18, 19, 1969

The conferees agreed upon the following conclusions and recommendations:

1. The States and the interstate water pollution control agencies, that is, the New Jersey State Department of Health, the New York State Department of Health and the Interstate Sanitation Commission, are taking effective action to abate pollution in accordance with the agreements arrived at at the Conference on Pollution of Interstate Waters of the Hudson River and its Tributaties held under the provisions of the Federal Water Pollution Control Act.

2. An extensive pollution abatement program is moving forward toward the attainment of water quality agreed on by the conferees representing the States of New Jersey, New York, the Interstate Sanitation Commission and the Federal Government.

3. The treatment required from sources discharging into the Hudson River and its tributaries is consistent throughout the Basin and mutually satisfactory to all the regulatory agencies concerned.

4. In view of the complexities of the problem, the conferees will plan to meet again in the late fall or winter of 1970 to evaluate progress on a case by case basis.

5. The activities of the Interstate Sanitation Commission in analyzing combined sewer overflows in the Hudson River Conference Area is

recognized. The conferees will participate with and support the Interstate Sanitation Commission in a detailed examination of storm water overflows as the first stage in the development of a remedial program, as needed; the New York State Department of Health will carry out that portion of this activity in the Hudson River Basin outside the jurisdiction of the Interstate Sanitation Commission. A joint report on this subject will be made to the conferees at the next session.

6. The State and interstate conferees agree that recent Federal action makes it appear that the Fiscal Year 1970 appropriations will be about one-fifth the authorization of $1 billion. They urge that the authorized amounts be appropriated if water pollution control needs are to be met. Further, the reimbursement features of the present statute must be retained.

APPENDIX B

WATER QUALITY CRITERIA

STATE OF NEW YORK

CLASS I

DEFINITION OR BEST USAGE: Fishing and any other usages except bathing or shellfishing for market purposes.

FLOW CONDITIONS:

1	Floating Solids	None which are readily visible and attributable to sewage, industrial wastes, or other wastes or which deleteriously increase the amounts of these constituents in receiving waters after opportunity for reasonable dilution and mixture with the wastes discharged thereto.
2	Settleable Solids	See Number 1.
3	Sludge Deposits	See Number 1.
4	Solid Refuse, Garbage, Cinders, Ashes, Oils, Sludge or Other Refuse	Garbage, Cinders, Ashes, Oils, Sludge or Other Refuse: None in any waters of the "Marine District" as defined by State Conservation Law. (See Remarks)
5	Sewage or Other Effluent	Effective disinfection if required by Interstate Sanitation Commission.
6	Oil, Grease, Oil Slicks, or Scum	Oil: See Number 13.
7	Coliform Density	Not Specified.
8	pH	Not Specified.
9	Dissolved Oxygen	An average of not less than 50% saturation during any week of the year, but not less than 3.0 ppm at any time.
10	Color	See Number 13.
11	Turbidity	Not Specified.
12	Taste, Odor	Not Specified.
13	Toxic Wastes, Deleterious Substances:	See over.
14	Heated Effluents and Temperature Criteria:	See over.

REMARKS: "The Marine District shall include the waters of the Atlantic Ocean within three nautical miles from the coastline and all other tidal waters within the State except the Hudson River northerly of the south end of (Cont'd.)

CLASS I (Cont'd.)

13 Toxic Wastes, Deleterious Substances:

None alone or in combination with other substances or wastes in sufficient amounts to be injurious to edible fish and shellfish, or the culture or propagation thereof, or which shall in any manner affect the flavor, color, odor, or sanitary condition of such fish or shellfish so as to injuriously affect the sale thereof, or which shall cause any injury to the public and private shellfisheries of this State; and otherwise none in sufficient amounts to impair the waters for any other best usage as determined for the specific waters which are assigned to this class.

14(a) Heated Effluents:

See Number 13.

(b) Temperature Criteria:

Within the mixing zone, water temperature shall not exceed 90°F.

Outside the mixing zone, water temperature shall not exceed 86°F after mixing; no permanent change in excess of 5 F° above normal will be permitted; discharges shall not raise monthly means of maximum daily temperatures more than 4 F° from September through May, nor more than 1.5 F° during June, July, and August; rate of temperature change shall be limited to 1 F° per hour, not to exceed 7 F° in any 24-hour period at maximum, except when natural phenomena cause these limits to be exceeded.

REMARKS (Cont'd.):

Manhattan Island." -- from Paragraph 301, Part IX, New York State Fish and Game Law.

WATER QUALITY CRITERIA (NOTE: Except where noted by an asterisk (*), these criteria have been approved by the Secretary of the Interior).		STATE OF	NEW JERSEY
		CLASS	FW-2

DEFINITION OR BEST USAGE: Fresh surface waters approved as sources of public potable water supply. These waters are to be suitable for public potable water supply after such treatment as shall be required by the State Department of Health. These waters shall be suitable also for all (Cont'd. under Remarks)

FLOW CONDITIONS: Minimum consecutive 7-day flow with 10 year recurrence interval.

1	Floating Solids	None of which are noticeable in the water or are deposited along the shore or on the aquatic substrata in quantities detrimental to the natural biota.
2	Settleable Solids	See Number 1.
3	Sludge Deposits	Harmful sludge deposits are not permitted.
4	Solid Refuse, Garbage, Cinders, Ashes, Oils, Sludge or Other Refuse	Not Specified.
5	Sewage or Other Effluents	Effective disinfection if required by the State Department of Health.
6	Oil, Grease, Oil Slicks, or Scum	Oil, Grease: See Number 1.
7	Coliform Density	Not to exceed an average MPN value of 1000/100ml. during any monthly sampling period nor 2400/100ml. in more than 20% of samples examined during such period.
8	pH	Between 6.5 and 8.5 unless naturally outside thereof.
*9	Dissolved Oxygen	For trout waters, not less than 5.0 ppm. Otherwise 4.0 ppm.
10	Color	Artificial coloring matter: See Number 1.
11	Turbidity	See Number 1.
12	Taste, Odor	Odor and taste producing substances: None which are offensive to humans, detrimental to the aquatic biota or capable of producing offensive tastes and/or odors in water supplies and fauna used for human consumption.
13	Toxic Wastes, Deleterious Substances:	See over.
14	Heated Effluents and Temperature Criteria:	See over.

REMARKS: (Definition Cont'd.) recreational purposes including fishing, the propagation and migration of native fish species desired for angling and other fish and aquatic life necessary thereto as well as any other reasonable uses.

WATER QUALITY CRITERIA STATE OF NEW JERSEY

CLASS FW-2 (Cont'd.)

13 Toxic Wastes, Deleterious Substances:

None which would affect humans or be detrimental to the natural aquatic biota.

14(a) Heated Effluents:

No thermal discharges which detrimentally affect the natural aquatic biota, or reasonably anticipated reuse of the waters.

(b) Temperature Criteria - Allowable Temperature Increase:

*(i) Trout waters:

None that will exceed 5 F° rise above natural temperature until stream temperature reaches 70°F; natural temperature will prevail above 70°F.

(ii) Non-trout waters:

None that will exceed 5 F° rise above natural temperature until stream temperature reaches 87°F, except in designated heat dissipation areas; natural temperature will prevail above 87°F except in designated heat dissipation areas.

WATER QUALITY CRITERIA
(NOTE: Except where noted by an asterisk (*), these criteria have been approved by the Secretary of the Interior).

STATE OF NEW JERSEY

CLASS FW-3

DEFINITION OR BEST USAGE: Fresh waters suitable for all purposes provided for under Class FW-2, except public potable water supply.

FLOW CONDITIONS: Minimum consecutive 7-day flow with 10 year recurrence interval.

1	Floating Solids	None which are noticeable in the water or are deposited along the shore or on the aquatic substrata in quantities detrimental to the natural biota.
2	Settleable Solids	See Number 1.
3	Sludge Deposits	Harmful sludge deposits are not permitted.
4	Solid Refuse, Garbage, Cinders, Ashes, Oils, Sludge or Other Refuse	Not Specified.
5	Sewage or Other Effluent	Effective disinfection if required by the State Department of Health.
6	Oil, Grease, Oil Slicks, or Scum	Oil, Grease: See Number 1.
7	Coliform Density	Not to exceed an average MPN value of 1000/100ml. during any monthly sampling period nor 2400/100ml. in more than 20% of samples examined during such period.
8	pH	Between 6.5 and 8.5 unless naturally outside thereof.
*9	Dissolved Oxygen	For trout waters, not less than 5.0 ppm. Otherwise 4.0 ppm.
10	Color	Color producing substances: See Number 12.
11	Turbidity	See Number 1.
12	Taste, Odor	Odor and taste producing substances: None which are offensive to humans, detrimental to the aquatic biota or capable of producing offensive tastes and/or odors in fauna used for human consumption.
13	Toxic Wastes, Deleterious Substances:	See over.
14	Heated Effluents and Temperature Criteria:	See over.

REMARKS:

WATER QUALITY CRITERIA STATE OF NEW JERSEY

CLASS FW-3 (Cont'd.)

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13 Toxic Wastes, Deleterious Substances:

None which would affect humans or be detrimental to the natural aquatic biota.

14(a) Heated Effluents:

No thermal discharges which detrimentally affect the natural aquatic biota, or reasonably anticipated reuse of the waters.

(b) Temperature Criteria - Allowable Temperature Increase:

(i) Trout waters:

None that will exceed 5 F° rise above natural temperature until stream temperature reaches 70°F; natural temperature will prevail above 70°F.

(ii) Non-trout waters:

None that will exceed 5 F° rise above natural temperature until stream temperature reaches 87°F except in designated heat dissipation areas; natural temperature will prevail above 87°F except in designated heat dissipation areas.

WATER QUALITY CRITERIA
(NOTE: Except where noted by an asterisk (*), these criteria have been approved by the Secretary of the Interior)

STATE OF NEW JERSEY

CLASS TW-2

DEFINITION OR BEST USAGE: Tidal surface waters having limited recreational value and ordinarily not acceptable for bathing but suitable for fish survival although perhaps not suitable for fish propagation. These waters shall not be an odor nuisance and shall not cause damage to pleasure craft having occasion to traverse the waters.

FLOW CONDITIONS:

1	Floating Solids	None which are noticeable in the water or contribute to the formation of sludge deposits along the shores.
2	Settleable Solids	Not Specified.
3	Sludge Deposits	Harmful sludge deposits are not permitted.
4	Solid Refuse, Garbage, Cinders, Ashes, Oils, Sludge or Other Refuse	Not Specified.
5	Sewage or Other Effluent	Effective disinfection if required by the State Department of Health.
6	Oil, Grease, Oil Slicks, or Scum	Oil, Grease: See Number 1.
7	Coliform Density	None in such concentrations that would impair the waters for assigned uses.
8	pH	Between 6.5 and 8.5 unless naturally outside thereof.
9	Dissolved Oxygen	Not less than 50% saturation.
10	Color	Not Specified.
11	Turbidity	Not Specified.
12	Taste, Odor	Taste and Odor producing substances: None, either alone or in combination, which are offensive or that would produce offensive tastes and/or odors in fauna used for human consumption.
13	Toxic Wastes, Deleterious Substances: See Over.	
14	Heated Effluents and Temperature Criteria: See Over.	

REMARKS:

WATER QUALITY CRITERIA

STATE OF NEW JERSEY

CLASS TW-2 (Cont'd.)

13 Toxic Wastes, Deleterious Substances:

None in such concentrations as to cause fish mortality or inhibit their natural migration.

14(a) Heated Effluents:

No thermal discharges which detrimentally affect reasonably anticipated reuse of the waters.

*(b) Temperature Criteria - Allowable Temperature Increase:

None that will have a detrimental effect upon the natural aquatic biota or reasonably anticipated reuse of the waters.

WATER QUALITY CRITERIA
(NOTE: Except where noted by an asterisk (*), these criteria have been approved by the Secretary of the Interior).

STATE OF NEW JERSEY

CLASS TW-3

DEFINITION OR BEST USAGE: Tidal surface waters used primarily for navigation, not recreation. These waters, although not expected to be used for fishing, shall provide for fish survival. These waters shall not be an odor nuisance and shall not cause damage to pleasure craft traversing them.

FLOW CONDITIONS:

1	Floating Solids	None which are noticeable in the water or contribute to the formation of sludge deposits along the shores.
2	Settleable Solids	See Number 1.
3	Sludge Deposits	Harmful sludge deposits are not permitted.
4	Solid Refuse, Garbage, Cinders, Ashes, Oils, Sludge or Other Refuse	Not Specified.
5	Sewage or Other Effluent	Effective disinfection if required by the State Department of Health.
6	Oil, Grease, Oil Slicks, or Scum	Oil, Grease: See Number 1.
7	Coliform Density	None in such concentration that would impair the waters for assigned uses.
8	pH	Between 6.5 and 8.5 unless naturally outside thereof.
9	Dissolved Oxygen	Not less than 30% of saturation, if such value is greater than 2.5 ppm. Otherwise, not less than 2.5 ppm.
10	Color	Not Specified.
11	Turbidity	Not Specified.
12	Taste, Odor	Taste and odor producing substances: None which shall be offensive or that would detrimentally affect finfish, shellfish, or other aquatic life in higher quality waters.
13	Toxic Wastes, Deleterious Substances: See over.	
14	Heated Effluents and Temperature Criteria: See over.	

REMARKS:

CLASS TW-3 (Cont'd.)

13 Toxic Wastes, Deleterious Substances:

None in such concentrations as to cause fish mortality or inhibit their natural migration.

14(a) Heated Effluents:

Not Specified.

*(b) Temperature Criteria - Allowable Temperature Increase:

None that will have a detrimental effect upon the natural aquatic biota or reasonably anticipated reuse of the waters.

APPENDIX C

STATE OF NEW JERSEY

DEPARTMENT OF HEALTH
P.O. BOX 1540, TRENTON, N.J. 08625

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

April 27, 1965

Passaic Valley Sewerage Commissioners
790 Broad Street
Newark, New Jersey

Gentlemen:

TAKE NOTICE, that the New Jersey State Department of Health in cooperation with the Interstate Sanitation Commission has determined, as a further step in the promotion of the quality of the surface waters of this State, effective postchlorination of the effluents of all sewage treatment plants discharging directly into the waters of the Interstate Sanitation Commission District must be effected on or before May 15, 1967. Thereafter, effective chlorination is to be required continuously each year from May 15 to September 15. Control over the chlorination operation will be effected primarily by the maintenance of a positive chlorine residual of not less than 1.0 part per million. The requirements will be intensified as found necessary in order to maintain receiving water quality criteria deemed necessary by the New Jersey State Department of Health and the Interstate Sanitation Commission.

These requirements in relation to chlorination are in addition to the requirement of the Passaic Valley Sewerage Commissioners to provide in the immediate future adequate sludge storage facilities.

Your cooperation in this important stream pollution control effort is solicited. The staff of the Stream Pollution Control Program of this Department will make itself available to cooperate with you.

Very truly yours,

Roscoe P. Kandle, M. D.
State Commissioner of Health

COPY

COPY

O R D E R

WHEREAS, The State Department of Health of the State of New Jersey did promulgate "Regulations Establishing Certain Classifications to be Assigned to the Waters of this State and Standards of Quality to be Maintained in Water so Classified," effective September 1, 1964, and

WHEREAS, The State Department of Health of the State of New Jersey did, after a public hearing conducted by the said Department on February 15, 1966, promulgate regulations entitled "Classification of the Surface Waters of the Hudson River, Arthur Kill and Tributaries," which became effective May 16, 1966, and

WHEREAS, The State Department of Health of the State of New Jersey has found, through investigations made by its representatives, that the sewage treatment plant owned and operated by the Passaic Valley Sewerage Commissioners, in the City of Newark, in the County of Essex and State of New Jersey, is inadequate in capacity or unit design to properly care for, treat and dispose of the sewage received therein before an effluent from the said sewage treatment plant is discharged into the waters of Upper New York Bay, being waters of this State, thereby causing or threatening injury to the inhabitants of this State either in their health, comfort or property, and

WHEREAS, The State Department of Health of the State of New Jersey in consideration of the aforesaid, is of the opinion that, in order for the sewage to be properly, adequately or sufficiently treated at the said sewage treatment plant before an effluent is discharged into the said waters of this State, the said sewage treatment plant must be altered, added to or improved in a manner approved by the said Department of Health, therefore

NOTICE IS HEREBY GIVEN, by the State Department of Health of the State of New Jersey, pursuant to R. S. 58:12-2, to the Passaic Valley Sewerage Commissioners, in the City of Newark, in the County of Essex and State of New Jersey, requiring that the said Passaic Valley Sewerage Commissioners must and shall, prior to December 1, 1968, cease the discharge of improperly, inadequately and insufficiently treated sewage into the waters of Upper New York Bay, being waters of this State, and must alter, add to or improve the sewage treatment plant operated by the said Passaic Valley Sewerage Commissioners in order that the sewage received therein shall be cared for, treated and disposed of and the effluent discharged into the said waters in a manner approved by the State Department of Health of the State of New Jersey, and in order that the treatment and disposal of said effluent shall meet the applicable standards of water prescribed by regulations of the State Department of Health entitled "Classification of the Surface Waters of the Hudson River, Arthur Kill and Tributaries," effective May 16, 1966.

STATE DEPARTMENT OF HEALTH OF THE STATE OF NEW JERSEY

Dated: August 9, 1966

Roscoe P. Kandle, M. D.
State Commissioner of Health

APPENDIX D

TABLE D-1

DATA, FEDERAL WATER POLLUTION CONTROL
ADMINISTRATION STUDY OF UPPER BAY OF NEW YORK HARBOR
AUGUST 19, 20, 1969

Station Number	Time (DST)	Water Temp. °C	pH	Conductivity (umhos/cm)	Chloride (mg/l)	DO (mg/l)	DO (% Sat.)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
					RUN #1				
18S	0910	23.8	7.25	30,700	14,350	2.3	32	41,000	6,500
19S	0900	23.6	6.98	30,350	14,1[illegible]5	2.1	29	47,000	7,000
20S	0850	23.5	7.35	31,200	14,590	1.6	22	220,000	16,000
21S	0840	23.4	7.25	31,400	14,681	2.2	30	280,000	17,000
22S	0830	23.6	7.25	31,700	14,818	2.5	34	440,000	21,000
23S	0815	23.5	7.15	32,100	15,000	1.8	25	33,000	3,200
18D	0910	22.4	7.30	35,700	16.650	2.2	30	580,000	50,000
19D	0900	22.1	7.20	37,600	17,545	2.8	39	67,000	13,000
20D	0850	22.4	7.35	36,500	17,045	2.6	36	390,000	37,000
21D	0840	22.9	7.40	34,850	16,250	2.0	28	220,000	26,000
22D	0830	23.1	7.30	33.700	15,750	2.3	32	320,000	58,000
23D	0815	22.5	7.30	36,100	16,850	2.0	28	7,300	1,100
20M	-	-	-	-	-	-	-	-	-
					RUN #2				
18S	1005	23.8	7.30	31,400	14,681	1.6	22	34,000	5,700
19S	1000	23.6	7.30	30,450	14,205	2.1	29	46,000	15,000
20S	0950	23.4	7.35	31,300	14,636	1.7	23	45.000	12,000
21S	0940	23.8	7.30	31,300	14.636	1.9	26	110,000	19,000
22S	0935	23.5	7.28	32,300	15.100	1.8	25	1,000,000	130,000
23S	0925	23.6	7.20	31,800	14,864	1.5	21	33,000	14,000

TABLE D-1 (Cont'd.)

Station Number	Time (DST)	Water Temp. °C	pH	Conductivity (umhos/cm)	Chloride (mg/l)	DO (mg/l)	DO (% Sat.)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
					RUN #2 (Cont'd.)				
18D	1005	22.8	7.40	35,700	16,650	3.1	43	48,000	5,700
19D	1000	22.5	7.40	36,150	16,875	2.5	35	410,000	36,000
20D	0950	22.6	7.40	36,200	16,900	2.5	35	290,000	16,000
21D	0940	21.7	7.55	38,500	17,955	3.8	53	54.000	12,000
22D	0935	22.9	7.35	34.200	15.958	2.1	29	610,000	96,000
23D	0925	22.8	7.20	34,000	15,875	1.8	25	22,000	4,900
20M	0950	23.2	7.30	33,800	15.792	1.9	26	58,000	5,600
					RUN #3				
18S	1105	23.7	7.35	31.560	14,755	1.7	23	47,000	12,000
19S	1120	23.6	7.30	31.410	14.686	2.1	29	520,000	62,000
20S	1130	23.8	7.27	31.900	14.909	2.1	29	350.000	21,000
21S	1145	23.7	7.35	32.500	15.200	3.6	50	39.000	20,000
22S	1155	23.8	7.30	32,000	14.955	2.4	33	230,000	20,000
23S	1205	23.4	7.35	33.360	15.608	2.7	37	230,000	19,000
18D	1105	22.5	7.30	36.970	17,259	1.7	24	1,000,000	110,000
19D	1120	21.7	7.50	38,410	17,913	3.4	47	290,000	13,000
20D	1130	21.5	7.51	38,800	18,100	3.5	48	36,000	2,400
21D	1145	21.8	7.45	36,330	16,965	3.5	48	46,000	5,400
22D	1155	22.1	7.45	37,180	17,355	3.2	44	96,000	13,000
23D	1205	21.5	7.50	38,500	17,955	3.5	48	55,000	2,900
19M	1120	22.0	7.25	37.530	17.514	2.1	29	47,000	17,000

TABLE D-1 (Cont'd.)

Station Number	Time (DST)	Water Temp. °C	pH	Conductivity (umhos/cm)	Chloride (mg/1)	DO (mg/1)	DO (% Sat.)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
					RUN #4				
18S	1220	23.6	7.20	32.330	15,115	2.5	34	390,000	30.000
19S	1235	23.4	7.20	33,900	15,833	3.0	42	230,000	70.000
20S	1247	24.0	7.50	33,720	15,754	3.8	53	63,000	17,000
21S	1255	23.1	7.45	35.500	16,550	3.6	50	31,000	1,300
22S	1305	23.3	7.45	34,950	16,295	3.7	54	54,000	20,000
23S	1315	23.1	7.40	35,260	16,436	3.4	47	260,000	17,000
18D	1220	22.1	7.40	37,530	17,514	3.1	43	760,000	70,000
19D	1235	22.1	7.45	38,300	17,864	3.5	49	45,000	2,600
20D	1247	21.8	7.50	38,200	17,818	3.5	49	34,000	5,300
21D	1255	21.4	7.55	38,710	18,055	3.9	54	230,000	16.000
22D	1305	22.0	7.60	37,410	17,459	3.8	52	68,000	8,500
23D	1315	23.0	7.45	37,600	17,545	3.4	48	32,000	1,900
19M	1235	22.1	7.50	37,700	1 ,591	3.4	47	23,000	2,200
					RUN #5				
18S	1413	23.2	7.60	35,650	16,625	3.6	50	73,000	13,000
19S	1420	23.2	7.59	35,850	16,250	4.1	57	54,000	4,600
20S	1436	23.4	7.58	35,120	16,373	4.0	56	47,000	5,800
21S	1445	23.3	7.60	36,040	16,830	4.4	62	500,000	3,300
22S	1458	23.5	7.42	34,300	16,000	2.9	40	270,000	19,000
23S	1505	23.5	7.50	35,250	16,431	4.5	63	67,000	6,300

TABLE D-1 (Cont'd.)

Station Number	Time (DST)	Water Temp. °C	pH	Conductivity (umhos/cm)	Chloride (mg/1)	DO (mg/1)	DO (% Sat.)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
					RUN #5 (Cont'd.)				
18D	1413	22.1	7.60	37,800	17,636	3.3	46	220,000	6,000
19D	1420	22.1	7.59	37,800	17,636	4.0	56	490,000	28,000
20D	1436	21.8	7.60	38,450	17,932	3.9	54	38,000	3,100
21D	1445	21.6	7.60	38,730	18,065	4.0	55	34,000	1,600
22D	1458	22.0	7.50	38,000	17,727	3.4	47	70,000	13,000
23D	1505	21.7	7.50	38,180	17,809	3.8	52	7,600	1,000
19M	1420	23.0	7.59	36,400	17,000	4.0	56	27,000	3,800
					RUN #6				
18S	1520	23.4	7.45	35,670	16,635	4.2	59	320,000	16,000
19S	1530	23.5	7.45	34,900	16,273	4.4	62	200,000	11,000
20S	1540	23.4	7.20	34,240	15,975	3.1	43	160,000	13,000
21S	1550	22.8	7.45	36,100	16,850	4.6	64	53,000	2,800
22S	1600	23.1	7.30	34,580	16,127	2.4	33	510,000	40,000
23S	1610	23.3	7.35	34,940	16,291	3.7	52	1,000,000	110,000
18D	1520	22.2	7.45	37,670	17,573	3.4	47	210,000	15,000
19D	1530	21.8	7.45	38,130	17,786	3.6	50	22,000	1,700
20D	1540	22.2	7.47	37,320	17,418	3.9	54	31,000	2,600
21D	1550	21.7	7.52	38,640	18,002	4.3	60	28,000	2,800
22D	1600	22.0	7.35	37,600	17,545	3.3	46	68,000	13,000
23D	1610	22.1	7.50	34,600	16,136	3.7	50	28,000	2,500

TABLE D-1 (Cont'd.)

Station Number	Time (DST)	Water Temp. °C	pH	Conductivity (umhos/cm)	Chloride (mg/1)	DO (mg/1)	DO (% Sat.)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
					RUN #7				
18S	1804	23.2	7.30	33,740	15,750	2.5	34	62,000	12,000
19S	1755	23.6	7.45	34,020	15,883	4.1	57	400,000	50,000
20S	1745	23.5	7.30	33,640	15,725	3.4	47	250,000	16,000
21S	1737	23.5	7.35	34,170	15,946	2.8	39	33,000	25,000
22S	1727	24.1	7.30	31,980	14,945	2.5	35	150,000	15,000
23S	1717	23.3	7.60	35,370	16,486	4.0	56	260,000	10,000
18D	1804	22.0	7.39	36,900	17,227	3.3	45	450,000	23,000
19D	1755	21.7	7.40	38,060	17,755	3.2	44	760,000	88,000
20D	1745	23.3	7.25	34,800	16,227	3.3	46	1,000,000	200,000
21D	1737	21.9	7.50	37,680	17,582	3.5	48	83,000	6,600
22D	1727	22.7	7.40	34,580	16,127	3.1	43	230,000	13,000
23D	1717	22.1	7.58	37,810	17,641	3.4	47	35,000	2,500
20M	1745	23.3	7.40	34,620	16.145	3.7	52	730,000	33,000
					RUN #8				
18S	1911	23.8	7.30	32,200	15,050	2.6	36	440,000	27,000
19S	1905	23.3	7.30	33,100	15,500	2.7	37	76,000	11,000
20S	1855	23.4	7.31	33,500	15,667	2.8	39	420,000	22,000
21S	1842	23.3	7.40	33,600	15,708	3.0	42	230,000	6,800
22S	1835	24.1	7.30	31,420	14,691	2.6	36	340,000	21,000
23S	1815	23.6	7.40	34,000	15,875	3.9	53	1,000,000	5,200

TABLE B-1 (Cont'd.)

Station Number	Time (DST)	Water Temp. °C	pH	Conductivity (umhos/cm)	Chloride (mg/l)	DO (mg/l)	DO (% Sat.)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
					RUN #8 (Cont'd.)				
18D	1911	22.3	7.40	37,100	17,318	2.6	36	92,000	7,500
19D	1905	22.5	7.05	36,540	17,064	2.8	39	390,000	18,000
20D	1855	23.4	7.30	34,700	16,182	2.9	40	340,000	19,000
21D	1842	22.0	7.42	37,300	16,000	3.5	48	1,000,000	200,000
22D	1835	22.8	7.40	35,460	16,503	3.2	44	93,000	20,000
23D	1815	22.2	7.45	37,280	17,400	3.6	50	250,000	7,300
20M	1855	23.4	7.30	34,200	15,958	2.8	38	330,000	19,000
					RUN #9				
18S	2105	23.6	7.40	31,300	14,636	2.0	27	80,000	18,000
19S	2050	23.7	7.40	32,400	15,150	2.2	30	170,000	15,000
20S	2030	24.0	7.20	32,600	15,250	2.3	32	190,000	13,000
21S	1955	22.7	7.40	35,600	16,600	2.6	36	650,000	27,000
22S	2015	23.9	7.40	32,600	15,250	3.1	43	290,000	40,000
23S	2040	23.9	7.40	32,100	15,000	1.8	25	80,000	18,000
18D	2105	22.5	7.40	36,000	16,800	2.4	33	210,000	13,000
19D	2050	22.5	7.40	36,300	16,950	2.3	32	180,000	34,000
20D	2030	22.5	7.40	36,300	16,950	2.5	35	150,000	12,000
21D	1955	22.7	7.40	35,700	16,650	2.8	39	1,100,000	92,000
22D	2015	23.2	7.30	26,900	12,545	3.2	43	330,000	26,000
23D	2040	22.4	7.40	37,900	18,591	1.8	25	110,000	24,000

TABLE D-1 (Cont'd.)

Station Number	Time (DST)	Water Temp. °C	pH	Conductivity (umhos/cm)	Chloride (mg/1)	DO (mg/1)	DO (% Sat.)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
					RUN #10				
18S	2220	23.6	7.40	30,800	14,400	1.8	25	71,000	17,000
19S	2210	23.5	7.40	31,200	14,590	2.1	29	70,000	14,000
20S	2150	23.7	7.40	32,500	15,200	2.1	29	210,000	15,000
21S	2125	23.9	7.40	31,500	14,727	2.1	29	110,000	18,000
22S	2140	23.7	7.40	33,100	15,500	2.7	38	500,000	50,000
23S	2200	23.9	7.40	32,300	15,100	2.3	32	57,000	14,000
18D	2220	22.8	7.40	35,000	16,318	2.5	34	310,000	12,000
19D	2210	22.4	7.50	36,500	17,045	2.5	35	250,000	12,000
20D	2150	22.0	7.40	36,500	17,045	2.0	28	200,000	14,000
21D	2125	23.4	7.40	34,100	15,917	2.7	38	380,000	50,000
22D	2140	22.7	7.40	35,700	16,650	2.5	35	1,500,000	130,000
23D	2200	22.3	7.40	36,800	17,182	2.1	29	210,000	16,000
20M	2150	23.3	7.40	34,000	15,875	2.3	32	1,700,000	130,000
				RUN #11					
18S	2320	23.4	7.50	30,400	14,200	2.0	27	66,000	14,000
19S	2330	23.5	7.40	31,100	14,545	1.8	25	430,000	42,000
20S	2340	23.5	7.40	32,[illegible]	15,350	2.2	30	310,000	22,000
21S	2345	23.6	7.40	32,300	15,100	2.0	28	80,000	19,000
22S	2355	23.4	7.40	32,700	15,300	2.1	29	330,000	37,000
23S	0010	23.8	7.50	33,800	15,792	2.0	28	140,000	17,000

TABLE D-1 (Cont'd.)

Station Number	Time (DST)	Water Temp. °C	pH	Conductivity (umhos/cm)	Chloride (mg/l)	DO (mg/l)	DO (% Sat.)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
				RUN #11 (Cont'd.)					
18D	2320	22.4	7.50	36,500	17,045	2.6	36	240.000	12,000
19D	2330	23.0	7.40	34,800	16,227	2.2	30	2,500,000	440.000
20D	2340	22.6	7.40	36,300	16,950	2.0	28	90,000	19,000
21D	2345	21.8	7.60	36,200	16,900	3.6	49	60.000	4,400
22D	2355	21.7	7.40	37,800	17,636	3.3	45	140,000	11,000
23D	0010	22.0	7.60	36,400	17,000	3.4	47	80,000	6,300
M	-	-	-	-	-	-	-	-	-
				RUN #12					
18S	0020	23.5	7.30	32,100	15.000	1.8	25	560,000	50,000
19S	0030	23.3	7.40	33,300	15,583	2.2	30	680,000	66,000
20S	0040	23.5	7.40	32.900	15,400	2.1	29	280,000	19,000
21S	0050	23.4	7.40	32,800	15,350	2.5	34	240,000	18,000
22S	0100	23.5	7.40	33.200	15.542	2.2	30	280,000	30,000
23S	0110	23.3	7.40	33,200	15,542	2.3	32	230,000	11.000
18D	0020	22.1	7.50	37,100	17,318	3.3	46	490,000	24,000
19D	0030	22.3	7.50	36,200	16,900	2.7	37	42,000	27,000
20D	0040	22.0	7.50	36,800	17,182	2.9	40	310,000	19,000
21D	0050	22.4	7.50	36,900	17,227	3.1	43	200,000	11,000
22D	0100	21.6	7.60	37,700	17,591	3.6	50	52,000	3,000
23D	0110	21.6	7.60	38.000	17.727	3.7	51	27,000	2,100

TABLE D-1 (Cont'd.)

Station Number	Time (DST)	Water Temp. °C	pH	Conductivity (umhos/cm)	Chloride (mg/1)	DO (mg/1)	DO (% Sat.)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
					RUN #13				
18S	0310	23.1	7.40	33.900	15,833	2.2	30	670,000	56,000
19S	0300	23.1	7.40	33,900	15,833	2.8	39	420,000	15,000
20S	0250	23.3	7.40	32,400	15,150	2.2	30	420,000	17,000
21S	0240	23.0	7.40	35,500	16,550	2.5	35	160,000	10,000
22S	0230	23.3	7.40	33.100	15,500	2.3	32	310,000	17,000
23S	0215	23.2	7.50	33.900	15.833	2.4	33	370,000	15,000
18D	0310	21.5	7.60	37,000	17,727	3.6	50	46.000	1,100
19D	0300	21.4	7.60	38,000	17,727	3.6	49	590,000	23,000
20D	0250	21.5	7.50	38,100	17.773	3.6	50	34,000	2,700
21D	0240	22.5	7.60	37.200	17,364	4.1	57	52,000	4,100
22D	0230	21.7	7.60	37,800	17.636	3.5	48	50,000	2,500
23D	0215	21.9	7.60	37,800	17.636	3.6	50	30,000	2,300
23M	0215	22.9	7.50	35.200	16,409	3.1	43	56,000	12,000
					RUN #14				
18S	0420	23.2	7.40	32,600	15,250	1.8	25	760,000	60,000
19S	0405	23.2	7.40	33,600	15,708	2.3	32	260,000	19,000
20S	0355	23.0	-	23,100	11,050	2.1	27	380,000	17,000
21S	0345	22.9	7.40	34,500	16,091	2.8	39	74,000	4,800
22S	0335	23.1	7.40	33,900	15,833	2.1	29	340,000	23,000
23S	0320	23.2	7.40	33,000	15,450	2.5	34	360,000	19,000

TABLE D-1 (Cont'd.)

Station Number	Time (DST)	Water Temp. °C	pH	Conductivity (umhos/cm)	Chloride (mg/1)	DO (mg/1)	DO (% Sat.)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
					RUN #14 (Cont'd.)				
18D	0420	21.2	7.60	38,200	17,818	3.6	49	74,000	9,000
19D	0405	21.5	7.60	38,000	17,727	3.7	51	36,000	2,300
20D	0355	22.2	7.60	37,200	17,364	3.6	50	40,000	2,200
21D	0345	21.0	7.50	38,500	17,955	3.8	52	200,000	11,000
22D	0335	22.1	7.60	37,100	17,318	3.5	49	73,000	11,000
23D	0320	21.7	7.50	37,800	17,636	3.5	48	68,000	4,400
23M	0320	22.6	-	36,000	16,800	-	-	110,000	6,700
					RUN #15				
18S	0615	23.1	7.40	34,000	15,875	2.0	28	170,000	14,000
19S	0600	23.3	7.30	33,100	15,500	2.2	30	160,000	15,000
20S	0550	23.2	7.40	32,100	15,000	2.0	27	460,000	24,000
21S	0535	23.2	7.50	33,100	15,500	2.2	30	480,000	26,000
22S	0525	23.7	7.40	31,100	14,545	2.5	34	270,000	22,000
23S	0510	23.0	7.60	32,800	15,350	2.5	34	300,000	15,000
18D	0615	21.8	7.60	37,600	17,545	2.9	40	1,400,000	60,000
19D	0600	21.9	7.60	37,400	17,455	3.6	50	170,000	10,000
20D	0550	21.9	7.40	36,300	16,950	2.9	40	4,000,000	760,000
21D	0535	22.6	7.50	35,000	16,318	3.4	47	490,000	28,000
22D	0525	23.2	7.40	32,300	15,100	2.5	34	330,000	24,000
23D	0510	22.2	7.60	37,000	17,272	3.7	51	43,000	2,900
23M	0510	23.1	7.60	33,800	15,792	2.6	36	360,000	25,000

TABLE D-1 (Cont'd.)

Station Number	Time (DST)	Water Temp. °C	pH	Conductivity (umhos/cm)	Chloride (mg/1)	DO (mg/1)	DO (% Sat.)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
					RUN #16				
18S	0720	23.4	7.90	30,900	14,450	1.8	25	53,000	13,000
19S	0710	23.3	7.30	32,300	15,100	2.0	28	70,000	11,000
20S	0655	23.0	7.30	31,600	14,773	2.2	30	400,000	9,000
21S	0645	23.3	7.30	32,400	15,150	2.5	34	300,000	21,000
22S	0630	24.2	7.30	30,100	14,050	2.3	32	290,000	30,000
23S	0625	23.3	7.40	33,400	15,625	2.5	34	96,000	12,000
18D	0720	22.9	7.30	34.400	16,045	1.8	25	320,000	15,000
19D	0710	22.9	7.50	35.000	16.31	3.4	47	450,000	16.000
20D	0655	23.0	7.30	33.000	15.450	2.0	27	560,000	24,000
21D	0645	22.5	7.40	35.200	16.409	2.6	36	220.000	9,000
22D	0630	23.1	7.40	33.500	15,66	2.4	33	270,000	14,000
23D	0625	22.6	7.30	35.900	16.750	3.5	48	72,000	11,000
20M	0655	23.2	7.30	32,400	15,150	2.0	27	590,000	46,000

DST - Daylight Standard Time
S - Surface Stations - taken five feet from water surface
M - Mid Stations - taken at mid depth
D - Deep Stations - taken five feet from bottom

APPENDIX E

Survival Study - Passaic Valley Sewage Treatment Plant Outfall

Background:

On September 14, 1964, approximately 1,000 lbs. of Rhodamine B dye was released over the Passaic Valley Sewage Treatment outfall near Robbins Reef in the Upper Bay during high water slack. From the dye results it can be extrapolated that material discharged in the northwest sector of the Upper Bay passes through the Narrows and exerts an effect on water quality in a broad area of the Lower Bay (Raritan Bay). Transit time to Staten Island beaches (Midland Beach and South Beach) is approximately 6 hours. Within 32 hours of release, effects can be detected as far west as Great Kills Harbor and east to the Coney Island shore of Brooklyn. Subsequent studies have shown dye detection at Staten Island beaches as early as 4 hours after release. If one accepts the basic premise that the dispersion pattern of sewage discharged at Robbins Reef is similar to that produced by the Rhodamine B dye, then several assumptions can be made concerning the role of the outfall discharge in contributing to the overall degradation of water quality at the Staten Island beaches.

Previous work(1)(2) has shown that densities of indicator bacteria and the pattern of Salmonellae isolation generally followed the movement patterns of sewage as indicated by the dye. The effective use of dye to indicate sewage affected areas in a river has also been substantiated(3). It follows then, that dye introduced at the outfall at Robbins Reef provides information on time of passage of the discharge from the Passaic Valley Sewage treatment plant outfall.

Sewage discharged at Robbins Reef can therefore be expected to reach South Beach and Midland Beach on Staten Island in 4 to 6 hours. Since sewage discharged by the Passaic Valley Sewage Treatment Plant only receives primary treatment and no disinfection, large quantities of coliform bacteria are discharged through outfall at Robbins Reef. For August 19-20, 1969, the effluent at the sewage treatment plant had a minimum coliform value of 90 x 10^6 per 100 ml, while the maximum value was 10 x 10^8/100 ml. Station 19, just north of the outfall at Robbins Reef, had the following coliform and fecal coliform values for that same period:

Coliform	Minimum	Maximum
Shallow samples (5 ft. from surface)	43×10^3	52×10^4
Deep samples (5 ft. from bottom)	22×10^3	25×10^5
Fecal Coliform		
Shallow samples	46×10^2	70×10^3
Deep samples	17×10^2	44×10^4

In addition to the high densities of indicator bacteria in the sewage treatment plant effluent and at the outfall, salmonellae were isolated at both these points. The salmonellae isolated are enteric pathogenic bacteria which cause gastroenteritis in man.

With the establishment of the above facts, one needs to know whether the intestinal bacteria discharged at the outfall survive the effects of salt water and transit time in sufficient numbers so as to exceed current New York State bacteriological standards for recreational waters at Staten Island.

A typical die-off curve of coliforms in seawater shows an initial lag phase followed by a mortality of up to 90% in 3 to 5 days. Orlob (1956)[4] reported typical curves for coliforms which included the initial lag phase, followed by a phase of rapid decline, a phase in which resistant cells developed and finally a phase in which the coliforms grew back again. Ketchum, et al(5) evaluated the effects of dilution and the bactericidal action of seawater on the survival of coliforms in estuarine waters. Most of the decline in numbers of coliforms was attributed to the bactericidal action of the water, while dilution appeared to play a small part in the kill. Initially, most of the evidence presented to explain the mechanism involved in the killing process was physico-chemical in nature. More recently, a number of workers have attempted to implicate the marine microflora as agents responsible for the killing effect. Mitchell, et al(6) (1967) found that the rate of kill of coliforms was proportional to the size of the marine microflora present. If the rate of kill of coliforms in seawater is directly related to the numbers and activities of the native marine microflora present, then the rate of decline of coliforms becomes variable. It is clear then, that a variety of parameters are associated with the destruction and disappearance of coliforms in estuaries. The bactericidal action of seawater, therefore, varies with the location, sampling time, seawater concentration, concentrations of carbon and energy sources plus a variety of other factors. Processes even implicated in tropical waters may have no relevance to temperate waters(7).

Since the die-off rates of coliforms are dependent upon the conditions present in the receiving estuary, it was necessary then to determine the longevity of coliforms under the conditions present in the Upper Bay. Since transit time of sewage from the outfall to South Beach and Midland Beach on Staten Island was found to be 4 to 6 hours — changes in coliform populations were studied over the 6 hour period. Coliforms present in the outfall receiving water and at selected points along the travel route through the Narrows were used in the study since it has been shown that laboratory-propagated strains have a greater resistance than the naturally occurring bacteria(8)(9).

During the study period, the temperature of the Upper Bay receiving water was 23°C. Several investigators(4)(10) have noted that the bactericidal action of seawater is more pronounced during the summer months than during the winter months. Others(11) noted that 41.4% of the original concentration of coliforms inoculated in seawater remained after 48 hours at 5°C, 11.3% remained at 20°C while only 2.3% remained in the water stored at 30°C. According to these results, the most adverse temperature conditions were being exerted on the survival of the coliform bacteria during the study period.

Experimental:

Several approaches have been used to demonstrate quantitative changes the coliform flora undergoes in contaminated waters. Each method, however, poses some type of limitation. Water collected and stored in flasks in the laboratory is not similar to the conditions found in the main body of water and survival data obtained from such a system will not be representative. If the flasks are immersed in the body of water, actual water temperatures may be duplicated, however, the system still does not allow for interaction with receiving water constituents. This objection may be overcome by using a dye tracer, such as Rhodamine B, a continuous flow-through fluorometer and recording graph to obtain changes in dye concentration. Therefore, it is now possible to follow a sample of water and to determine quantitative changes in coliform density with respect to time and distance from the sewage outfall. This, however, presupposes that the receiving water is a fairly closed system with a single point discharge and has a net movement in only one direction. Unfortunately, the Upper Bay experiences a tidal excursion every 12 hours and has many sources of raw or inadequately treated sewage so as to render the method useless.

In order to simulate natural conditions, a number of investigators employed bacterial suspensions placed in cells or sacks made of a semi-permeable membrane. These were then suspended in the water for various periods of time. This technique was used by Beard and Meadowcroft in their studies on the survival of typhoid and coliform bacteria in seawater(12). Similar techniques were also used to study the survival of fecal streptococci in seawater(13). One of the main objections involved in a dialysis chamber, is that the dilution effect is not completely expressed and passage of higher molecular weight compounds will be restricted. Protozoa and other bacterial scavengers will be eliminated unless introduced with the sample water. Some have also objected to the use of small sample volumes of water (in the order of 25-50 ml) that have been used in the dialyzing chambers.

Since dye tracer techniques in conjunction with coliform die-offs, could not be employed in the Upper Bay study, the next most feasible method of simulating the natural environment was used. Dialysis chambers containing 1 liter of sample water were used in the study. The larger volume of sample water would allow for a greater number of predators and natural microflora present to exert possible effects on the longevity of the coliform bacteria. By collecting water at a series of points along the transit route from the outfall followed by suspension in dialysis chambers at the collection site, dilution effects at these points may be incorporated into the system.

Dialyzer tubing used is permeable to water and permits passage of low molecular weight compounds in aqueous solution while retaining materials with molecular weights of 12,000 and higher, such as proteins. Bacteria will be retained by the membrane, however, viruses and bacteriophage will be allowed passage.

Results:

One liter of sample water was collected at the sewage discharge field (Buoy Qk Fl G "27", Robbins Reef); in the Narrows at Buoy Fl R "22" Gong; off the Quarantine Station at Staten Island in the Narrows and at South Beach at Navigational Aid - "23" Bell. Total coliform bacteria were assayed by the MF (membrane filter) procedure at the time of sample collection and the water was then placed in sterile dialysis chambers, sealed and suspended 5 feet from the surface. Salmonella assays were only performed on water from the outfall station (QK Fl G "27") before suspension and then again 6 hours later upon retrieval of the dialysis chamber. Total coliform assays were again performed on all waters held in dialysis chambers after 6 hours. The following table shows coliform densities at the time of collection and after 6 hours exposure in the dialysis chambers.

Station	Sample vol. ml	*Total Coliform/100 ml		% Survival	Salmonella Isolations	
		0 hr.	6 hrs.		0 hr.	6 hrs.
Robbins Reef Nav. Aid (G "27")	1,000	42,000	40,000	95.2	*S. enteritidis* ser. siegburg *S. enteritidis* ser. derby *S. enteritidis* ser. oranienburg	*S. enteritidis* ser. siegburg *S. enteritidis* ser. bredeney *S. enteritidis* ser. thompson
Narrows Nav. Aid Fl R "22"	1,000	24,000	20,000	83.3		
Narrows Quarantine Station	1,000	58,000	34,000	58.6		
South Beach Nav. Aid Bell "23"	1,000	21,000	20,000	95.2		

*Averages based on triplicate plate analyses.

Above results indicate that considerable numbers of coliforms survive the 6 hour exposure period that is required for passage of sewage from the outfall to South Beach and Midland Beach on Staten Island. At the four points studied, from 58 to 95% of the coliforms survived the 6 hour exposure and remaining indicator densities exceeded the New York State bacteriological standard for bathing beach water (2400 coliforms per 100 ml). At the outfall, 42,000 coliforms/100 ml were observed. At the end of the 6 hour exposure period, 95% of these bacteria were still viable. Salmonellae were concurrently isolated from the outfall receiving water at Robbins Reef before the sample was placed in the dialysis chamber for immersion. *Salmonella enteritidis* ser. siegburg, *S. enteritidis* ser. derby and *S. enteritidis* ser. oranienburg were detected in the sample prior to immersion. *S. enteritidis* ser. siegburg, *S. enteritidis* ser. bredeney and *S. enteritidis* ser. thompson were isolated from the dialysis chamber after the 6 hour immersion period in the bay water. The occurrence of such pathogens in the outfall receiving waters at Robbins Reef poses an initial hazard to water users in the Upper Bay. The fact that a similar serotype (*S. enteritidis* ser. siegburg) plus other species could still be isolated after 6 hours exposure to bay water, establishes a potential, secondary effect on the beaches located below the Narrows. Credibility of these data are enhanced by the routine isolations of salmonellae made in previous studies at South Beach and Midland Beach on Staten Island(2) and by the isolation of *S. enteritidis* ser. san diego at South Beach on September 4, 1969.

On September 2 and 4, 1969 effluent of the Passaic Valley Sewage Treatment Plant was analyzed for the presence of salmonella. The following organisms were isolated:

Salmonella Serotypes	Date Isolated
S. enteritidis ser. alachua	September 2, 1969
S. enteritidis ser. manhattan	September 2, 1969
S. enteritidis ser. typhimurium	September 2, 1969
S. enteritidis ser. heidelberg	September 4, 1969

In the (Jan. - July 1969) Salmonella Surveillance Reports of the U. S. Public Health Service, ten of the most frequent Salmonella serotypes infecting man in the United States are ranked.

Two serotypes isolated from the Passaic Valley Sewage Treatment Plant effluent and two serotypes isolated at the outfall receiving water are among the top ten. They are *S. typhimurium*, *S. heidelberg*, *S. thompson* and *S. derby* which rank one, three, six and ten respectively.

Ten Most Common Serotypes Infecting Man in the United States (January to July 1969)(14)

Rank	Salmonella serotypes
1	*S. typhimurium*
2	*S. enteritidis*
3	*S. heidelberg*
4	*S. newport*
5	*S. infantis*
6	*S. thompson*
7	*S. st. paul*
8	*S. typhi*
9	*S. blockley*
10	*S. derby*

Conclusions:

1. Large densities of coliform bacteria are being discharged in the Upper Bay by the Passaic Valley Sewage Treatment Plant effluent.

2. Salmonellae are also being discharged by the treatment plant effluent. These pathogens are capable of infecting man, causing gastroenteritis.

3. Dye dispersion studies show that sewage discharged at the Robbins Reef will reach South Beach and Midland Beach on Staten Island in 6 hours.

4. Coliforms and salmonellae discharged at Robbins Reef survive the 6 hour transit time required to reach the beaches on Staten Island. Remaining coliform densities exceed New York State bacteriological standards established for bathing waters.

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MR. KLASHMAN: Mr. Bromberg, on your Recommendation No. 5 on this tentative plan, did I hear you say a year, or did you say six months?

MR. BROMBERG: Six months. I'm sorry. You are right.

MR. KLASHMAN: So that should read "A tentative plan" --

MR. BROMBERG: "Tentative plan and time schedule should be submitted in six months."

MR. KLASHMAN: Thank you.

MR. STEIN: Are there any other comments or questions on the report?

(No response.)

MR. STEIN: I have very few, for emphasis.

Let's see if I understand this. On Page 6 you indicate that, "The Commissioners' plant, serving 1,200,000 people ... discharges primary treated effluent without disinfection."

I don't know whether that is satisfactory, but the rest of your report indicates 10 percent instead of a minimum of 20 percent reduction in BOD, say, on the average maybe up to 13 percent, and it seems to me that the net report we are getting may be a little less than what you would even expect from primary treatment.

MR. BROMBERG: It would appear, based on the criteria for evaluating a primary plant, yes, that the removals are less than one might expect.

MR. STEIN: Right. The conferees agreed that secondary treatment as a minimum is needed, and this is not even meeting primary treatment. Is that correct?

MR. BROMBERG: That is correct.

MR. STEIN: I would like to see if I understand what you said on Page 28. You indicate that wastes from the Passaic Valley Sewerage Commissioners facilities can be a definite hazard to persons utilizing the waters of the Lower Bay for recreational purposes.

Does that mean, in light of what you said before, that this can reach the bathing beaches of Staten Island and Coney Island -- that discharges from the Passaic Valley Commissioners' plant or system can be a definite health hazard to persons using Coney Island or Staten Island for bathing?

MR. BROMBERG: Yes, sir, they can.

MR. STEIN: I wonder how many people in Coney Island know that who use the water.

(Laughter.)

The next one I have is on Page 39. This deals with some of the paucity of information.

I might say that I have been up the Passaic River and have seen the flows coming out. You say: "Efforts are continuing by the State of New Jersey and the Federal Water Pollution Control Administration to identify the sources of these flows."

These flows go into sewers controlled by the Passaic Valley Sewerage Commissioners; isn't that so?

MR. BROMBERG: In some instances, the discharges we are talking about are direct discharges from a source of a waste. In other words, they don't go into any municipal sewerage system or Passaic Valley. In other cases they do go into a municipal system before they discharge.

MR. STEIN: But isn't it kind of unusual -- and I guess if we have to put out State or Federal funds we just have to do this -- for the municipality not to take on the job of identifying the sources of those wastes, and not having the State and the Federal Government take on what is usually a local function and the responsibility of the locality to find out what wastes go into their system?

MR. BROMBERG: I think they are in the best position to find out what is being discharged. Yes.

MR. STEIN: If we are talking in terms of Federal-State-local responsibility, the law on this is very clear. I am talking in terms of the limited funds and resources that the

States, the Federal Government, and the interstate agency have. If we cannot rely on the municipality or its engineer, something, it seems to me, is breaking down.

MR. BROMBERG: This is what has made the job unusually difficult for us up to this time in attempting to do this ourselves without a good background or knowledge of the area.

MR. SULLIVAN: May I comment here?

MR. STEIN: Yes.

MR. SULLIVAN: With respect to that point, in New Jersey the primary law enforcement agency in water pollution control is the State Health Department. However, some of these pipes which are suspected of contributing to the pollution are storm sewers, and if the data and subsequent sampling show that these storm sewers, because of illegal connections, are actually causing further pollution of the Passaic River, then the legal process in New Jersey would call for administrative orders to be issued gainst the municipality that owns the sewer, requiring it to eliminate these illegal connections.

But, with regard to those industries and others that directly go into the stream, including municipalities, obviously we can't rely upon the local government to correct this.

MR. STEIN: That's right. Mr. Sullivan, that states the law as it is in, I think, all the States. But, generally speaking, we have not had to have the Federal Government or the State gather the evidence on what was municipal sewage. The municipalities have the job to do that themselves.

I think, again, this may be part of the problem. Without hearing the rest of the statements here this morning, I don't want to, in any sense, prejudge anything. But I think we have heard from Mr. Bromberg a pretty classic statement -- and I am not drawing any conclusions from the statement -- a pretty classic statement of a facility that is overloaded, a pretty classic statement of pollution effects and a causal connection between the discharges and the damage, something that has been lasting over a long period of years -- a situation where either the State or the Federal people find it impossible to get the information. I would think that with the record standing by itself, if this is to be corrected, we have to look at other people to make statements.

Now, I understand--and I know I was directed to do this myself--that about one hundred invitations were sent out. So far, other than the officials of the State of New Jersey, we have two people who have indicated they want to talk.

Again, I say I will let the record speak for itself in the face of what Mr. Bromberg has said here.

The reason I bring this up is, if anyone wants to have anything to say for consideration of the record, in the next recess he should make his wishes known that he desires to make a statement on this matter.

With that, we will stand recessed for ten minutes.

A VOICE: Mr. Chairman --

MR. STEIN: We are recessed. I'm sorry.

(Whereupon a recess was had.)

MR. STEIN: Let's reconvene, please.

I will call on Mr. Sullivan for New Jersey.

Mr. Sullivan.

STATEMENT OF
RICHARD J. SULLIVAN
CONFEREE AND DIRECTOR
DIVISION OF CLEAN AIR AND WATER
NEW JERSEY STATE HEALTH DEPARTMENT
TRENTON, NEW JERSEY

MR. SULLIVAN: Thank you, Mr. Chairman.

I have said the same thing several times, but I will reiterate it for the record.

Only two from New Jersey, besides the official participants, have indicated their intention to testify at this hearing. I reiterate it for the record, because in past hearings it was the custom for the State to sponsor witnesses from its own jurisdiction, and I would like to make sure, Mr. Chairman, that no one here suffered under the misunderstanding that some arrangement must be made with us in order to be able to testify.

So, if there is anybody present from New Jersey who would like to add testimony to the record, feel perfectly free to make those arrangements with the Chair.

I am happy to participate in this conference. Everyone is expected to say that, even if he is miserable and angry over the whole thing.

(Laughter.)

But, speaking for the State Department of Health, whose designee I am at this conference, its demands of etiquette are not high on this occasion. Our contacts with the local representatives of the Federal Water Pollution Control Administration are frequent, they are cordial, and they are constructive. We think of this conference as an extension of that arrangement, which may or may not have any lasting effect upon the course of history, but certainly worth the experiment of a day or two of testimony in the hope that by shedding more information on this problem, more forces can be brought to bear toward its correction.

While I favor and welcome the conference and hope that it will produce something constructive, and we will do everything we can to make this be the case, I would like to offer a couple of comments and suggestions under the general heading of administrative neatness.

First of all, when the conference was first convened back in 1965, the Chairman then, who is the Chairman now, described the scope of the area to be considered -- that is, the physical geographic scope of the conference -- as follows:

> "The area of the Hudson River to be considered at this conference encompasses the Upper Bay of New York Harbor, including Newark Bay, the Kill Van Kull, the East and Harlem Rivers, and the main stem of the Hudson River from the Battery to the head of navigation at the Federal lock at Troy, New York."

In effect, what has been done here is to reconvene a conference to discuss pollution in an area that is not included within the conference.

I don't want to hang on a little procedural detail such as this, but it does create a certain awkwardness as a result.

We don't object to the conference being extended to the Passaic River. Whatever any process can do in order to bring the Passaic River closer to our water quality standards will be appreciated.

But, as an example of the problem that can be created by this administrative awkwardness, the public statement that was made when the conference was called said, in effect, that a number of industries along the Passaic River have failed to meet the recommendations of the previous conferences. I must point out that that is in error, since no recommendations of previous conferences were ever given to any industries or other entities along the Passaic River, and the construction of the original sessions of the conference was such that those people would not even think it logical to participate, so that there were no recommendations binding upon them or of concern to them that they could or could not have violated.

Furthermore, the announcement said that 40-odd municipalities and industries are being invited to this conference in order to inform us of the remedial steps to be taken to eliminate pollution. However, the facts collected by ourselves and the Federal Water Pollution Control Administration do not show that the 40-odd who received these invitations, and the number has since been extended, as the Chairman said, are, in fact, polluters.

Now, I think, as the public announcement further said, it is useful to focus the spotlight of public opinion on those who are responsible for the degradation of our waterways. We do it all the time with a publication in the press of every administrative action taken by ourselves.

I don't think it serves the cause, however, to focus the spotlight on nonpolluters who get placed on this list simply because they live in the neighborhood. I think that has been the case.

One further comment along these lines: While we have worked very closely with the Federal Water Pollution Control Administration in making joint surveys in the lower Passaic and elsewhere in New Jersey, but most recently here, and have been fully aware of the work they have been doing, and we have shared data, it would be helpful to us if in the future the report upon which the Federal testimony just given was based could be made available to us in its entirety well in advance of the conference, so that we could respond not just to the general substance of it, but also to some of its particularities.

In this case, we received the report last Friday afternoon, and there really was not opportunity to make this kind of examination.

One final point in this category: With regard to the Passaic Valley Sewerage Commissioners, they obviously have not met the recommendations of the previous conference. They are subject to those recommendations, because their effluent goes not into the Passaic River, but into New York Harbor. Obviously, we feel that they have not met State requirements and we will deal with this at some length a little later on. That gave rise to the litigation in which we are now engaged.

R. J. Sullivan

It ought to be pointed out for the record, however, that almost nobody else in the conference area has met or will be able to meet the recommendations of this conference. whatever disagreements we have with Passaic Valley Sewerage Commissioners, let's not so oversimplify the problem of pollution of this area to allow ourselves to believe that all by themselves they are dirtying up that magnificent Hudson River.

For many years, the Passaic Valley Sewerage Commissioners as an institution and the Lower Passaic River, over which they have jurisdiction, were felt to be off limits by the State Department of Health. There is a specific State statute to which Mr. Bromberg referred that originally established the Commissioners and prescribed their functions. It is a complex statute, and the complexity has been made worse by the addition over the years of other statutes dealing with water pollution control.

But, the fact is for many, many, many years, the operation of the plant of the Commissioners and the pollution by anyone of the Lower Passaic River, were considered to be the exclusive jurisdiction of the Commissioners. Action was not taken by the State to require the upgrading of this facility, or to require those along the lower Passaic to abide by the rules and regulations binding upon those who would pollute any of the other waterways of New Jersey.

Well, in our opinion, it is unreasonable to make a decision as large as this based upon an assumption that one would get from a reading of this complex statute.

It seems to me absurd that the Passaic River ought not to be considered the waters of the State in terms of water pollution control in general, and just as silly that the effluent into New York Harbor could not be dealt with in the manner in which other effluents into the harbor are dealt with. How in the world can water quality standards be met on this basis?

Well, we decided to find out whether or not this jurisdiction is exclusive, whether it has been preempted by the Commissioners, and issued a water pollution control order to that agency. That order was updated, and it is the one that is now binding, on the 31st of March 1967.

I would like, Mr. Chairman, to enter a copy of that order itself into the record.

MR. STEIN: Without objection, that will be entered into the record as if read.

MR. SULLIVAN: Because the earlier requirements of that order which contained a schedule for correction were not met in the fall of 1967, our Department asked the Attorney General to institute legal proceedings in the Superior Court in the hopes that we would obtain an injunctive order requiring the Passaic Valley Sewerage Commissioners to meet the requirements of our administrative order.

Mr. Theodore Schwartz, Deputy Attorney General, who represents our Department in this litigation, will follow me to the podium to outline the scope and substance of that legal action, which is still current so I will not get into it here.

With regard to the river itself, opposed to the matter of issuing an order and having its jurisdiction tested in the courts involving the Commissioners, looking at the river itself you will all remember the pre-colonial expedition of Lewis and Clark. In October of 1968 it was Sullivan and Clark that made the first expedition into the lower Passaic, so far as we can tell, for decades, by representatives of the State Health Department.

The Clark in this equation is Douglas Clark, our Supervising Engineer, and we took the Department's outboard motor boat and made the first scouting trip up the lower Passaic. The boat was twice disabled when it ran into debris.

(Laughter.)

When the weather broke in the spring of 1968, an intensive sampling program was done of all outfalls which we could discover. By the 15th of August, enough information had been gleaned to allow us to issue eight administrative orders, one to the City of Newark and the others to seven industries which were illegally polluting the lower Passaic. By 3 October, we had enough information upon which we could base five additional orders.

Throughout this survey period, we have enjoyed the full cooperation of our Federal friends. We met with representatives of the Federal Water Pollution Control Administration for survey planning and the exchange of data that each of our agencies collected on the 8th of August, the 22nd of September, the 29th of September, and the 7th of November.

Our field investigators jointly went to make investigations of the lower Passaic, including the taking of samples, on the 25th and 30th of September, the 1st, 28th, 29th and 30th of October, and November 19th.

In our judgment, we have an obligation here to minimize the duplication, to keep costs of this enforcement program to a minimum by taking advantage of the facilities of both agencies in a way that they don't duplicate one another.

In addition to the orders that have thus far been issued, there are five industries about which we have strong suspicions of violations of the statute. We do not have enough factual information in those five instances to satisfy us that we have the basis to issue an administrative order. This will be collected by continued surveillance. In fact, our people were there last week, but the tidal conditions were not conducive to samples, and the samples were not obtained.

In addition, there are fifteen storm sewers which are thought to have illegal connections with a variety of pollutants, also making a contribution to the condition of the lower Passaic. Here we want additional samples to make as full as possible an identification of what the pollutants are, and more information that will identify who the owner of the sewer is -- that is, the municipality -- so we know against
#2 whom we should proceed to achieve the necessary correction.

The two key words in New Jersey for water pollution control have been "money" and "enforcement." The money question is always with us. I have never lost the opportunity at one of these Federal conferences, like Cicero's outraged speeches against Carthage, to raise the question of the need for additional Federal support to build the facilities which we know are necessary.

This year, since three weeks ago, the voters of New Jersey, by a three to one plurality, decided to tax themselves $242 million to provide aid for sewerage construction. We have glistening credentials to urge the Federal Government to go and do likewise.

R. J. Sullivan

Two hundred and forty-two million dollars that we have earmarked for pollution control facilities in New Jersey is more than the Congress appropriated last year for the entire Nation. We are encouraged by the reports we receive now of the interest of Congress in perhaps raising its appropriations to the full billion dollars, and we would urge, for whatever difference that would make, favorable consideration of that appropriation. The timing would be just lovely for New Jersey if the year that we approved our bond issue would also be the year when the ice was broken in Washington to provide the maximum funds and take the burden off the backs of the local property taxpayers.

The other word is "enforcement." So far as I am concerned, as the administrator of this agency, we have no intention to allow the remedial statutes that are charged to us to go unenforced. I think enforcement and the establishment of the climate for compliance that it brings has been a key in the last couple of years in convincing those who have responsibilities to correct pollution that the State does in fact take its requirements seriously, and that it will, where administrative orders are not kept, invoke the sanctions of a statute in the form of whatever court action is available, including, in some areas, that rather drastic remedy of the cessation of construction or the curtailment of industrial production until adequate corrective measures have been made.

The courts have been very responsive to these requests. In the last two years, in 125 instances, New Jersey has gone to court to seek a remedy in the form of pollution correction, and the State has not been unsuccessful in any one of these cases.

Our chief counsel, who is to a great extent responsible for this successful record, will follow me now to describe, as the attorney who has represented the State in the litigation against Passaic Valley Sewerage Commissioners, something about that case, and I would like, with the permission of the Chair, now to call Mr. Theodore Schwartz.

MR. STEIN: Before you call him, let's see if there are any comments or questions of you.

(No response.)

MR. STEIN: I have just a couple, Dick, and I would like to give you the last opportunity to answer these, but on the first one, when you talked about the first conference, you were correct. I described the 158-mile reach of the Hudson River, but we also had a previous sentence talking about the matter of pollution of the interstate waters of the Hudson River and its tributaries, and the Passaic Valley is the tributary. At least to us, this was clear from a point of view of administrative cognizance.

Goodness knows, in any of these cases -- and we have not only had them here where we have an agency that purports to have control over municipal and industrial wastes in an area--we certainly give them a crack at trying to clean them up. However, where the situation persists and we have a major source of pollution emanating from a tributary and we can't get the information, it seems to us we have no recourse but to go up to the source and find out where that is coming out into the interstate waters.

Now, I don't anticipate any difficulty with the State on this. I think you knew what we were doing, but the reason that we did not deal with the individual companies before was we anticipated, in dealing with the Passaic Valley authorities, they would cover them all for us.

Evidently, our technical information shows that this did not quite happen, and I think your information shows it did not quite happen, because there are a series of industries that you proceeded against directly.

MR. SULLIVAN: We have no quarrel whatever to the extension of the conference to the Passaic River, none whatever.

MR. STEIN: Right.

MR. SULLIVAN: And I think if you need information, you are welcome to go sample it from any source you choose. If you need entrée into an industrial plant to collect further information, we will be glad to provide it.

The only point I was making was that many people thought that those pollution conditions on the Passaic were not, in fact, the subject of previous conferences and were a little disturbed to be notified now, when they didn't even go to any of these conferences, that they had failed to meet the recommendations that had proceeded from those conferences.

MR. STEIN: I understand what you are saying. We thought, and we certainly considered the entire Passaic River as a contributor. In the earlier conferences we expected that to be cleaned up, which it wasn't. But I believe we have covered the point.

Do you want to say anything else on that?

(No response.)

MR. STEIN: The other point I have is this: I appreciate your remarks on the testing of the law in the Passaic Valley, and I am sure Mr Schwartz will give an indication of the legal position of the State. But, you know, we had the same kind of situation in clarifying jurisdiction of the Passaic Valley Sewerage Commissioners under the Federal law.

In the 1948 Act, there was a curious phrase that exempted from the enforcement action of the Federal statute any area which was covered by a stipulation entered into in the Supreme Court of the United States. I remember back in 1948, or maybe it was 1949 -- even before I met Mr. Klashman -- my first job in water pollution control was to look at all the Supreme Court cases and see how many stipulations were filed.

Well, I went to the Supreme Court case records and I came up with the Passaic Valley case pretty fast, in about a half an hour, and then I said, "This is what we have."

My boss sent me back, and then I came back in about a day, and I said I could not find any more.

So, then I was sent back again and spent about a week. Then I came back and said that was all, that we only had one, and they said, well, they weren't quite sure.

But, I was determined, so I went back for a month, but I came back with the same report.

Anyone in the law knows it is hard to prove a negative. Well, since that day no one has been able to find another case. That is the only one covered, and we had an area of doubt, and probably an area of exemption, the only one in the United States from a Federal enforcement jurisdiction, and it took a 1956 amendment when the Congress took this up and eliminated it, so I think we are very sympathetic with you because we have had the same problem in this area, and it took Congressional action on the Federal level to clarify it.

There is one last point I want to make. When you point out about others contributing to pollution of the Hudson River, I think we have pointed this out in other conferences.

However, I think it is fair to say that on the basis of compliance reports we have received -- and we will hear from the interstate agency and New York State later, and this goes for other New Jersey communities and other areas -- that we have a program for a clean-up of the river.

What you say is true, Mr. Sullivan, there may be a possibility that the deadlines may not be met, but it is not a question in any one of these areas if it is going to be done; it is a question of when.

I am not sure that we are free and clear and can say the same thing at this point for Passaic Valley -- that we have the same kind of commitment that it is definitely going to do it with possibly a little slippage in its attempt.

MR. SULLIVAN: We have not received such a commitment from the Passaic Valley, and the Passaic Valley is here and can testify for itself and will explain a little later in the program.

MR. STEIN: Right.

MR. SULLIVAN: I simply wanted to point out again for the record, whatever it means, it is not only a possibility that these other entities will not meet the conference recommendations, it is an absolute certainty, and that the Hudson River, into which this inadequately treated effluent goes, is polluted already before the effluent gets there.

That does not mean we should not examine into the steps that Passaic Valley Sewerage Commissioners have to take in order to upgrade their own facilities. It may mean, however, that even if we dispose satisfactorily of the issues before this particular session of the conference, continued surveillance will be required of all the other institutions in the region to make sure that they are pushing ahead on as fast a program as possible to correct their own pollution sources.

MR. STEIN: Thank you.

Are there any other comments or questions?

A VOICE: Mr. Stein, I realize you don't take statements --

MR. STEIN: I surely don't. I'm sorry.

A VOICE: I did want to say --

MR. STEIN: I am really sorry. You will be given an opportunity later.

Are there any other comments or questions?

MR. SULLIVAN: I mentioned at the outset of my comments that anyone who wishes to testify please get in touch with the Chairman. It is my understanding that the schedule is such that immediately following luncheon, the first witness representing an agency in New Jersey, Mr. Lubetkin for the

Passaic Valley Sewerage Commissioners, will be present to speak and presumably give his side of the story.

MR. STEIN: Right.

The reason for that is this, gentlemen: We have tried it the other way. The difficulty is that if we let one person get up, we have to afford the same privilege to anyone else, and what we tend to do in that case is have a mass meeting -- which is not bad, because I like them.

However, the difficulty that we have is, it takes so long, and instead of finishing this in a day or two, we are in a place for a week.

We have imposed on the State and the other people to come here to the conference, and also we are faced with Thanksgiving Day, and I surely want to get you home for that turkey dinner, so please bear with us on the proceedings.

(The documents submitted by Mr. Sullivan for inclusion in the record are as follows:)

R. J. Sullivan

ORDERS - PASSAIC RIVER

Name and Location	Pollution Abatement By
Celanese Chemical Company 354 Doremus Avenue Newark	November 10, 1969
City of Newark Doremus Bar Area	November 10, 1969
Benjamin Moore & Company 134 Lister Avenue Newark	November 10, 1969
Vulcan Materials Doremus Avenue Newark	November 10, 1969
Essex Chemical Doremus Avenue Newark	November 10, 1969
Revere Smelting & Refining Avenue P Newark	November 10, 1969
Union Carbide, Linde Division Newark	November 10, 1969
Wright Aeronautical Div. Curtis Wright Corp. Borough of Wood-Ridge	November 10, 1969
Interstate Soap Company 171 Blanchard Street Newark	January 5, 1970
Otis Elevator Harrison	January 5, 1970
Public Service Electric & Gas Harrison	January 5, 1970
Kramer Chemical Kearny	January 5, 1970

R. J. Sullivan

ORDERS - PASSAIC RIVER

(Continued)

Alcon Aluminum Kearny	January 5, 1970
Town of West Orange	January 5, 1970

* * *

CERTIFIED MAIL October 3, 1949

RETURN RECEIPT REQUESTED

Mr. Peter J. Capellino, Registered Agent
for Interstate Soap Company
171 Blanchard Street
Newark, New Jersey

Dear Sir:

There is enclosed for service upon you as Registered Agent for Interstate Soap Company an Order, in duplicate, made by this Department pursuant to the provisions of R. S. 58:12-2.

Kindly acknowledge receipt of this Order by affixing your signature and date of acceptance on the back of the original and return it to this Department in the enclosed envelope. The duplicate may be retained by you.

R. J. Sullivan

Very truly yours,

Ernest R. Segesser, Chief Engineer
Water Pollution Control Program

6K26:G5

Encl.

c.c. Air Pollution Control Program
Division of Fish and Game
Division of Water Policy and Supply
Passaic Valley Sewerage Commissioners
Metropolitan State Health District

* * *

ORDER

WHEREAS, The State Department of Health of the State of New Jersey has found through investigations made by its representatives that Interstate Soap Company, in the City of Newark, County of Essex and State of New Jersey, is discharging industrial waste and other polluting matter into the Passaic River, being waters of this State, thereby causing or threatening injury to the inhabitants of this State either in their health, comfort or property, in violation of R.S. 58:12-2; and

R. J. Sullivan

WHEREAS, The State Department of Health of the State of New Jersey has found through investigations made by its representatives that Interstate Soap Company, in the City of Newark, County of Essex and State of New Jersey, is discharging harmful, deleterious and polluting matter from a sewer or drain into the Passaic River, being waters of this State. without approval of the State Department of Health as required by R. S. 58:12-3; and

WHEREAS, The State Department of Health of the State of New Jersey, in consideration of the aforesaid findings, is of the opinion that in order for the wastewater to be properly, adequately and sufficiently treated and/or otherwise disposed of, wastewater treatment and/or disposal facilities must be provided in a manner approved by the State Department of Health of the State of New Jersey; therefore

NOTICE IS HEREBY GIVEN, by the State Department of Health of the State of New Jersey, pursuant to the applicable provisions of R. S. 58:12-2 to Interstate Soap Company, in the City of Newark, County of Essex and State of New Jersey. requiring that the company, on or before January 5, 1970, install and provide wastewater treatment and/or disposal facilities in order that the

Company's wastewaters be properly, adequately, and sufficiently treated and/or otherwise be disposed of in a manner approved by the State Department of Health; and

NOTICE IS FURTHER GIVEN, by the State Department of Health of the State of New Jersey that the Company cease and desist discharging its industrial waste or other polluting matter from any sewer or drain into the waters of the Passaic River, being waters of this State, by January 5, 1970 and thereafter.

STATE DEPARTMENT OF HEALTH OF THE STATE OF NEW JERSEY
Richard J. Sullivan, Director
Division of Clean Air and Water

Dated: October 3, 1969

* * *

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

August 15, 1969

Mr. F W. Theis, President
Celanese Chemical Company
354 Dorman Avenue
Newark, New Jersey 07105

R. J. Sullivan

Dear Mr. Theis:

There is enclosed for service upon you an Order, in duplicate, made by this Department pursuant to the provisions of R. S. 58:12-2.

Kindly acknowledge receipt of this Order by affixing your signature and date of acceptance on the back of the original and return it to this Department in the enclosed envelope. The duplicate may be retained by you.

Very truly yours,

Ernest R. Segesser, Chief Engineer

Water Pollution Control Program

6K22:014

Enclosure

cc: Air Sanitation

Division of Fish and Game

Metropolitan State Health District

Interstate Sanitation Commission

Passaic Valley Sewerage Commissioners

* * *

ORDER

WHEREAS, The State Department of Health of the State of New Jersey has found through investigations made by its representatives that Celanese Chemical Company in the City of Newark, County of Essex and State of New Jersey, is discharging industrial waste and other polluting matter into the Passaic River, being waters of this State, thereby causing or threatening injury to the inhabitants of this State either in their health, comfort or property, in violation of R. S. 58:12-2; and

WHEREAS, The State Department of Health of the State of New Jersey has found through investigations made by its representatives that Celanese Chemical Company in the City of Newark, County of Essex of the State of New Jersey, is discharging harmful, deleterious and polluting matter from a sewer or drain into the Passaic River, being waters of this State, without approval of the State Department of Health as required by R. S. 58:12-3.

WHEREAS, The State Department of Health of the State of New Jersey, in consideration of the aforesaid findings, is of the opinion that in order for the wastewater to be properly, adequately and sufficiently treated and/or otherwise disposed of, wastewater treatment and/or disposal facilities must be provided in a manner approved by the State Department of Health of the State of New Jersey; therefore

NOTICE IS HEREBY GIVEN, by the State Department of Health of the State of New Jersey, pursuant to the applicable provisions of R. S. 58:12-2 to Celanese Chemical Company in the City of Newark, County of Essex and State of New Jersey, requiring that the Company, on or before November 10, 1969, install and provide wastewater treatment and/or disposal facilities in order that the Company's wastewaters be properly, adequately, and sufficiently treated and/or otherwise be disposed of in a manner approved by the State Department of Health; and

NOTICE IS FURTHER GIVEN, by the State Department of Health of the State of New Jersey that the Company cease and desist discharging its industrial waste or other polluting matter from any sewer or drain into the waters of the Passaic River being waters of this State by November 10, 1969 and thereafter.

STATE DEPARTMENT OF HEALTH OF THE STATE OF NEW JERSEY
Richard J. Sullivan, Director
Division of Clean Air & Water

Dated: August 15, 1969

* * *

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

March 30, 1967

Passaic Valley Sewerage Commissioners

790 Broad Street

Newark, New Jersey

Attention: Mrs. Charles T. Schaedel, Clerk

Gentlemen:

There is enclosed for service upon you an Amended Order, in duplicate, made by this Department pursuant to the authority vested in it by law. This Amended Order concerns the responsibilities of your City as they relate to the standards of quality of waters to be maintained in the Upper New York Bay.

Kindly acknowledge receipt of this Amended Order by affixing your signature and date of acceptance on the back of the original and return it to this Department in the enclosed envelope. The duplicate may be retained by you.

Very truly yours,

Robert S. Shaw, Assistant Director

for Water Pollution Control

6E4:G6

Enclosures

* * *

AMENDED ORDER

WHEREAS, the State Department of Health of the State of New Jersey, on April 27, 1965, addressed a letter to the Passaic Valley Sewerage Commissioners of the City of Newark, in the County of Essex and the State of New Jersey, stating "TAKE NOTICE, that the New Jersey State Department of Health in cooperation with the Interstate Sanitation Commission has determined, as a further step in the promotion of the quality of the surface waters of this State, effective postchlorination of the effluents of all sewage treatment plants discharging directly into the waters of the Interstate Sanitation Commission District must be effected on or before May 15, 1967. Thereafter, effective chlorination is to be required continuously each year from May 15 to September 15. Control over the chlorination operation will be effected primarily by the maintenance of a positive chlorine residual of not less than 1.0 part per million. The requirements will be intensified as found necessary in order to maintain receiving water quality criteria deemed necessary by the New Jersey State Department of Health and the Interstate Sanitation Commission," and

WHEREAS, the State Department of Health of the State of New Jersey, on August 9, 1966 issued an Order to the

Passaic Valley Sewerage Commissioners in the City of Newark, in the County of Essex and the State of New Jersey, requiring that the said Commissioners, prior to December 1, 1966, cease the discharge of improperly, inadequately and insufficiently treated sewage into the waters of Upper New York Bay, being waters of this State, and alter, add or improve the sewage treatment plant operated by the Passaic Valley Sewerage Commissioners in order that the sewage received therein shall be cared for, treated and disposed of, and the effluent discharged into the said waters in a manner approved by the State Department of Health of the State of New Jersey, and in order that the treatment and disposal of said effluent shall meet the applicable standards of water quality prescribed by regulations of the State Department of Health entitled "Classification of the Surface Waters of the Hudson River, Arthur Kill and Tributaries," effective May 16, 1966, and

WHEREAS, the Federal Water Pollution Control Administration of the United States Department of the Interior requires that Orders issued as aforesaid under the Water Pollution Control Plan of the State of New Jersey, which Plan is subject to review by and approval of the Federal Water Pollution Control Administration, include a timetable of significant events including the contemplated date for the completion of construction of sewage treatment projects, and

WHEREAS, it is incumbent upon the State Department of Health of the State of New Jersey, in conformity with the nation-wide water pollution control program of the Federal Water Pollution Control Administration, to be specific as to the minimum degree of sewage treatment meeting the approval of the said State Department of Health,

THEREFORE, the State Department of Health of the State of New Jersey amends, in part, its Order of August 9, 1966, addressed to the Passaic Valley Sewerage Commissioners, in the City of Newark, in the County of Essex and the State of New Jersey, by deleting the following paragraph:

"NOTICE IS HEREBY GIVEN, by the State Department of Health of the State of New Jersey, pursuant to R. S. 58:12-2, to the Passaic Valley Sewerage Commissioners, in the City of Newark, in the County of Essex and State of New Jersey, requiring that the said Passaic Valley Sewerage Commissioners must and shall, prior to December 1, 1966, cease the

> "discharge of improperly, inadequately and insufficiently treated sewage into the waters of Upper New York Bay, being waters of this State, and must alter, add to or improve the sewage treatment plant operated by the said Passaic Valley Sewerage Commissioners in order that the sewage received therein shall be cared for, treated and disposed of and the effluent discharged into the said waters in a manner approved by the State Department of Health of the State of New Jersey, and in order that the treatment and disposal of said effluent shall meet the applicable standards of water quality prescribed by regulations of the State Department of Health entitled 'Classification of the Surface Waters of the Hudson River, Arthur Kill and Tributaries,' effective May 16, 1966."

and substituting in lieu thereof the following language:

NOTICE IS HEREBY GIVEN, by the State Department of Health of the State of New Jersey, pursuant to R. S. 58:12-2, to the Passaic Valley Sewerage Commissioners, in the City of Newark, in the County of Essex and the State of New Jersey, requiring that the said Passaic Valley Sewerage Commissioners, must and shall, prior to October 30, 1970, cease the discharge of improperly, inadequately and insufficiently treated sewage into the waters of the Upper New York Bay, being waters of this State, and must alter, add to or improve the sewage treatment plant operated by the Passaic Valley Sewerage Commissioners, including sewage treatment units designed to provide at all times a minimum of 80 percent reduction in biochemical oxygen demand of the sewage received at the said sewage treatment plant, in order that the sewage received therein shall be cared for, treated and disposed of, and the effluent discharged into the said waters in a manner approved by the State Department of Health of the State of New Jersey, and in order that the treatment and disposal of said effluent shall meet the applicable standards of water quality prescribed by regulations of the State Department of Health entitled 'Classification of the Surface Waters of the Hudson River, Arthur Kill and Tributaries,' effective May 16, 1966, and in effecting abatement of pollution of the waters of this State within the time hereinabove provided, shall execute the following work performance schedule:

(1) Place in operation effective postchlorination equipment on or before May 15, 1967, and henceforth maintain continuously each year, from May 15 to

September 15, a positive chlorine residual of not less than one part per million in the effluent discharged to the Bay;

(2) Complete a report upon the proposed basis of design of additions and alterations with review and approval of the same by the State Department of Health on or before October 1, 1967;

(3) Complete preparation of and secure review and approval of preliminary plans on or before April 1, 1968;

(4) Complete preparation of and secure review and approval of detailed contract plans and specifications on or before March 1, 1969;

(5) Award construction contracts on or before June 1, 1969;

(6) Complete construction on or before October 30, 1970.

STATE DEPARTMENT OF HEALTH OF THE STATE OF NEW JERSEY
Richard J. Sullivan, Director
Division of Clean Air and Water

Dated: March 31, 1967

* * *

STATEMENT OF

THEODORE A. SCHWARTZ, ESQ.

DEPUTY ATTORNEY GENERAL

NEW JERSEY DEPARTMENT OF HEALTH

TRENTON, NEW JERSEY

MR. SCHWARTZ: Mr. Chairman, Members of the Hearing Committee today, Conferees, I should say:

I appreciate this opportunity to be able to speak, and I endorse all the remarks made by Mr. Sullivan as his attorney. I know our office has some serious questions about this conference.

Now, you pointed out, Mr. Chairman, that in your research concerning the Passaic Valley Sewerage Commissioners' case, which dates back to the early 1900's and wasn't really terminated until the early 1920's, the funny part about that case is it was started by the city of New York.

The city of New York was very much concerned that the sewage from the Passaic Valley Basin was going to be discharged into the waters of Upper New York Bay, and hence present a problem to the citizens of the city of New York, and possibly endanger, as we have heard today, some of its bathing beaches in Coney Island and Staten Island.

T. A. Schwartz

Well, if you read that case very thoroughly, which I am sure you did, you will find that the Court denied the injunctive request of the city of New York, the reason being because the city of New York was putting out millions of gallons of raw sewage into the Hudson River, and here the Passaic Valley Sewerage Commissioners back in those days was trying to provide adequate treatment facilities to treat all their wastes.

It is an interesting anecdote that we still have the same situation today: that is, the city of New York discharging raw sewage into the Hudson River, which has been in existence -- that case was in the early 1900's -- for almost sixty years with the same practice going on.

I might add that the stipulation entered into by the Federal Government at that time, the Secretary of War, concerned the type of treatment and the effluent quality that was to be provided by the Sewerage Commissioners, and the Secretary of War, or, I should say, the United States Government, had always had the power since that stipulation was entered into to do something about the Passaic Valley sewage situation. They clearly violated the standards of that stipulation for many, many, many years, and it was not until the State Department of Health, under the direction of Mr. Sullivan, stood up and said, "Well, let's find out if the State of New Jersey has jurisdiction in this case," and as I will discuss later, we found that we were successful, but the Federal Government never took any action against the Sewerage Commissioners, which they had ample authority to do.

The Passaic Valley Sewerage Commissioners operate a sewage treatment plant in the City of Newark which provides treatment for domestic and industrial wastes from approximately 28 municipalities and 4 counties, Essex, Passaic, Bergen and Hudson. The sewage treatment plant discharges approximately 200 million gallons, or better, per day, of sewage effluent into the waters of Upper New York Bay, and these waters, of course, are in the State of New Jersey.

On the diagram that you showed, the outfall line is located just at the borderline between the State of New York and the State of New Jersey at Robbins Reef.

It is estimated that this sewage discharge contains a residual pollution load equivalent to that contributed by the discharge of raw sewage for a population of 3.5 million people. This figure was arrived at by the engineers for the Health Department who helped in the preparation of the necessary evidence for our case.

In order to preserve and protect the public health of the citizens of this State against pollution of the waters, and to maintain the quality of the waters from the disposal of inadequate or improper treatment of sewage, the Department, on September 1st, 1964, promulgated regulations establishing certain classification to be assigned to the waters of this State as standards of quality to be maintained in the waters so classified.

These regulations set up certain classifications and standards of quality which may be assigned to any of the waters of this State. There are numerous classes of water quality standards which are set forth in the Federal presentation, and I don't think I have to get into that.

In order to assign these standards throughout the State for water quality, the Department conducted numerous hearings in each of the major watersheds, including the Passaic River Basin.

On May 16, 1966, the Department, after holding appropriate hearings, promulgated regulations concerning classification of the surface waters of the Hudson River, Arthur Kill, and tributaries. These waters were classified by the Department as TW-2 -- at least, that is where the Commissioners discharge their sewage effluent.

In order to meet the various standards, the Department issued numerous abatement orders to other sewage treatment plants throughout the State, and in this particular region in order to attain these water quality standards.

Acting pursuant to a statutory authority, the Department, on April 27, 1965, issued an order to the Passaic Valley Sewerage Commissioners requiring it to provide effective postchlorination of its effluent before discharging the same into the waters of the State of New Jersey. The postchlorination was to be in operation on or before May 15, 1967, and to remain effective continuously each year thereafter from May 15 to September 15.

In an effort to assist the Commissioners in obtaining a feasibility study for providing postchlorination, the Department, on September 22, 1965, issued a grant to the Commissioners in the sum of $20,000 pursuant to the provisions of the State Public Sanitary Sewerage Facilities Assistance Act of 1965.

The Department, as indicated in the Federal presentation, did issue an order to the Commissioners to upgrade its treatment in 1966, and, as you full well know, that order was changed as a result of the Hudson River Conference, in that the recommendations of one of the conferences indicated that a time schedule should be placed in the abatement order, so we had to issue an amended order to the Passaic Valley Sewerage Commissioners embodying a time schedule for the necessary improvements.

This amended order, which is the order that we instituted our suit on, was issued on March 31, 1967, and it repeated the requirement of postchlorination, and indicated that the Commissioners would be required to upgrade its treatment facilities to conform with the TW-2 standard by October 30, 1970, in order to provide a minimum of 80 percent reduction in BOD of the sewage received at the plant before discharge into the waters of the State of New Jersey.

This order set forth a time schedule in accordance with the Federal recommendations and the recommendations of the conferees at previous conferences for the necessary improvements, alterations and additions.

As a result of an investigation conducted by the Department of Health, on August 29, 1967, it was found that the Commissioners had not complied with that part of the administrative order requiring effective postchlorination equipment to be installed on or before May 15. The records of the Department further indicated that the Commissioners had not submitted a report as required by Paragraph 2 of the order. In fact, the Commissioners has also admitted the fact most candidly that they did not comply with the directives of the order, and that they have not complied at this point.

When I hear statements of the Federal representatives that the waters in the conference area do not meet the water quality standards fixed by the two States of New York and

#3 New Jersey, I must agree, but you must also agree that according to the time schedules that have been set forth in the orders, that you don't expect the water quality standards to be met at this time.

On September 14, 1967, Director Sullivan requested our office to institute suit as quickly as possible against the Passaic Valley Sewerage Commissioners for their failure to comply with this pollution abatement order.

If you review the order, you will find that the first date came to shortly around that period of time, and as soon as the evidence was clear that they had not complied with the first part of the administrative order, Director Sullivan requested our office to start suit.

On September 19th, just a few days later, I filed suit in the Superior Court, Chancery Division, in Essex County, to obtain an order to show cause, which was made returnable on October 13th, before the Honorable Milton Mintz.

This action on the part of our office within five days of receiving a request for a suit is standard operating procedure in the Attorney General's Office on water pollution and air pollution cases. I don't think you are going to find one other State in the country that acts as rapidly and as swiftly as does the State of New Jersey in pollution abatement problems. The record of the Federal Government doesn't even compare in such a way as to even shine our shoes.

(Laughter.)

On the return day of the order to show cause, the Passaic Valley Sewerage Commissioners raised questions that concerned the Department's jurisdiction, and hence the necessity of its compliance with the Department's pollution abatement order.

Due to the importance of the legal questions that had been raised, extensive oral argument was held by Judge Mintz on two separate dates, and briefs were submitted on all questions raised.

I might point out, Mr. Chairman, as you well know, as I note from the presentation that is contained in the publication that was issued to me this morning, that all my records have been copied and all that information that you obtained came from our office, because we made all of our files available to you at extensive cost to us. We had them Xeroxed. We had Mr. Hemenway in our office for a day, and other people, and I am glad to see that the information was of some value.

Due to the interesting legal questions that were involved, and the impact of any court decision, the opinion by Judge Mintz was finally rendered on April 24, 1968.

I might point out, although we did not try to argue anything concerning the Federal Water Pollution Control Act, we did you a favor, because if you read the opinion -- and I am sure you did -- you will note there is quite a bit of material in there concerning the activities of the Federal Government and certain powers that you have. We were happy to see this in the opinion, because we thought that it might help you in the enforcement procedures in other States to have a determination of some of your powers under the Federal Act. It was of great importance to us, as far as our action.

On July 24, 1968, an order was signed by Judge Milton Mintz following a motion that had been filed by the State Department of Health to settle the form of the order -- that is legal jargon which I am sure you are well aware of -- and we had trouble agreeing on the terms of the order and, as such, we had to make a customary motion.

On September 5, 1968, the Passaic Valley Sewerage Commissioners, at all times within their rights, filed a notice of appeal with the Superior Court Appellate Division.

On October 24, 1968, we had a new entrant into the case, and that is the City of Newark. The City of Newark apparently became quite disturbed, because they felt that the handwriting was on the wall and that they had better get involved in this case and try to hold things up a little bit, because they may not be able to have the money to expend for the necessary treatment facilities.

The city, as I indicated, moved to intervene or to file as amicus curiae. We opposed this motion, because we felt that the Passaic Valley Sewerage Commissioners had substantial power and authority to raise the necessary funds within the Act in order to comply with the departmental directive.

On December 11, 1968, as per request of the United States Department of the Interior, I forwarded copies of all trial and appellate documents for their review.

On January 10, 1969, the Appellate Division permitted the city of Newark to file a brief related to arguments not raised by the Commissioners, and indicated that they would decide the status of the city of Newark after oral argument on the entire matter.

On May 19, 1969, the Appellate Division denied Newark's motion to intervene, but granted leave to the city to appear as amicus curiae.

On May 22, 1969, the Appellate Division affirmed Judge Mintz's opinion.

On June 4, 1969, again, in my opinion, in an attempt to hold up this project, the city of Newark filed a notice of a petition for certification to review the Appellate Division decision of May 19, denying leave to the city to intervene, and to review the final judgment of the Appellate Division of May 22, 1969.

I might point out that the Passaic Valley Sewerage

Commissioners did not attempt to invoke another legal move in order to stop this activity on the part of the State Department of Health, but the City of Newark did.

Extensive briefs again were filed, as you, I am sure, are well aware of the size -- they went into hundreds of pages -- and the Supreme Court of the State of New Jersey on October 14th denied the petition of the city of Newark, so, as far as our office is concerned, the matter is finished in the courts with regard to the interpretation of the powers of the Commissioners and of the Department.

During the entire course of this litigation, the Federal Water Pollution Control Administration has been kept advised by telephone calls and meetings of all events that have transpired. I have spoken on numerous occasions with Mr. Lester Klashman, the Regional Director of the Federal Water Pollution Control Administration; Mr. Kenneth Walker, the local representative of the Administration; Mr. Raymond Coulter, the Deputy Solicitor of the Department of the Interior; Mr. Theodore Rogowski, Assistant Solicitor of the Department of the Interior; and Mr. Carl Klein, the Assistant Secretary of the Department of the Interior.

As Mr. Sullivan pointed out during his remarks, there has always been this question as to whether or not the State had jurisdiction in the Passaic Valley area. Well, we found that we certainly have jurisdiction over the treatment works. There is no question in our minds that we do have jurisdiction of the discharges of any industrial wastes or polluting matter into the Passaic River itself within the Commissioners' district.

As Mr. Sullivan correctly pointed out, this particular portion of the river has always been under the auspices of the Passaic Valley Sewerage Commissioners. We always had utmost faith in them to be able to police their own watershed, and, as such, they had ample statutory powers to institute any actions they desired against polluters.

I don't know the extent of their enforcement activities, but the Department, recognizing its responsibility to prevent pollution throughout the entire State, no matter where the source may be, had taken it upon themselves to start investigations back in 1968 with the knowledge of the Federal Water Pollution Control Administration. They knew what we were doing. They knew that we were trying to attack these problems, not only on the Passaic River, but also in Newark Bay and Lower Hackensack.

The Department, of course, is not equipped with the extensive facilities available to the Federal Government, and we trust that in the future we will work hand in hand in assembling information that will help us enforce our statutes where we have manpower shortages.

During the course of the litigation, arguments had always been raised concerning the financial inability of the Passaic Valley Sewerage Commissioners to pay for this improvement. There have been estimates of $100 million up to $150 million.

We recommended to the Commissioners in the early part of the year -- or, it might have been the latter part of 1968 -- in conversations with their attorney that they try to overcome this financial hurdle by introducing legislation to increase their bonding power for capital improvements.

Taking our suggestion -- and, I am sure they had considered this on their own -- a bill was introduced in our Senate on April 14, 1969, which would empower the Passaic Valley Sewerage Commissioners to raise all of the necessary monies available to it for the complete renovation of its treatment plant. The bill passed the Senate in the month of May, and due to a number of press releases that were put out by myself and Director Sullivan, noting the importance of the passage of this bill to provide the necessary funds, we had letters of commitment of certain of the members of the legislature that they would move this bill along and get it passed.

Well, you may recall that when the Passaic Valley Sewerage Commissioners had the problem concerning the release of raw sewage into the Passaic River, hearings were conducted by the legislature to find alternate means to correct the situation, or to help out.

The State of New Jersey through not only the Department of Health, but also the Attorney General, objected most strenuously to any discharge of raw sewage into the Passaic River. During the course of those hearings, it was pointed out that the financial problems of the Passaic Valley Sewerage Commissioners were acute, and that they needed this bill in order to build its treatment plant.

It was also indicated at this hearing, although an official report I don't think has been filed by the legislature -- I may be mistaken -- but all the legislators agreed that this bill had to be passed and moved on as expeditiously as possible.

On July 22nd, at the request of Raymond Coulter, the Deputy Solicitor of the Department of the Interior, I appeared in Washington and met with Mr. Carl Klein.

I missed you that day, Murray, but I met with everybody else that has been involved in this situation and spent the entire day discussing the Passaic Valley problem.

I was very gratified to hear from Mr. Klein and Mr. Coulter that New Jersey is considered to be the leading State in the country as far as pollution enforcement is concerned.

They were very anxious to learn about the varied remedies we have imposed in the courts, as indicated by Mr. Sullivan, and they wanted to offer their assistance to help us with the Passaic Valley sewerage situation, and they all knew very well that the State of New Jersey had moved as expeditiously as humanly and legally possible to bring this correction about.

At that time I asked Mr. Klein if he would lend his support, being that we had a Republican legislature and we had a Republican Administration in Washington, to see if he could pry some of the legislators into moving this bill.

Well, on August 5th, at a special session of the legislature, the bill didn't come up for a vote, but something else did. But we were promised that it would be passed on November 17th and, as you well know, every day that we waste costs us more money, or the Commissioners, and the citizens that have to pay for the sewage treatment--costs them more money for construction costs, as we waste time.

Well, November 17th the bill was not passed, but, I am happy to say, and I feel very relieved today, that the legislators, in their wisdom, passed this bill yesterday by a resounding vote -- I think there was only one vote in opposition -- and I am sure that the Governor, who is vitally concerned about the pollution problems of the State of New Jersey and has always been during his administration, will sign the bill as expeditiously as possible.

When this bill is signed, I would, in fact, think that now there is no reason, there are no stumbling blocks, there are no bridges to cross, there is no water to cross any more and no excuses that can be made any more from the Passaic Valley Sewerage Commissioners regarding the upgrading of its treatment plant, and I am sure that Mr Lubetkin, when he makes his presentation today, will point out exactly what the Sewerage Commissioners has planned to do.

We, of course, are very happy about this, but we are also concerned that the work move as expeditiously as possible.

I have gone into great detail, Mr. Chairman, and for one simple reason: I want you to know, and I want the Federal Government to know, and I want the people to know who are sitting out here today that the State of New Jersey has done everything within its power to bring about the correction of this situation, and we are not adverse to going back to court to hold the Commissioners in contempt, or to oppose building plans in the Passaic River Basin if they don't start moving.

I was very disturbed this morning to hear the presentation of the Federal Government concerning the pollution of other waters in the conference area. I am not sticking up for the Passaic Valley Sewerage Commissioners -- they hate me because I have driven them to the bone -- but I think these people should know out here as many facts as possible.

I see the person responsible for the city of New York sitting right in front of me. I know he is a strong advocate of the programs that are adopted by the city of New York.

But it is not only the Passaic Valley Sewerage Commissioners. You have 95 percent of your Hudson River within the boundaries of the State of New York, and I remember from previous conferences the amount of pollution that is discharged into this river, which certainly affects Upper New York Bay, and many times you hear the problems of the city of New York, that they are discharging 300 million gallons to 500 million gallons of raw sewage a day into the Hudson River, which certainly has an effect upon the waters of Upper New York Bay.

Reading some of the samplings of these fecal coliform counts, I notice that they are above the dispersal field of the Passaic Valley Sewerage Commissioners, which indicates to me that there are other sources, and I am very surprised that this hearing has been called to just single out one individual entity when we are talking about an enormous problem.

There are many recommendations that I have to add to the ones proposed in the Federal Report.

Most importantly, I would like to see, and I recommend that, a new approach be taken with regard to the Passaic Valley Sewerage Commissioners that all of these statutes be completely restudied because the law is archaic. It goes back to 1907. We have to change all these complicated contracts. The rates, as indicated in the Federal Report, for sewage treatment are very low, which doesn't enable the Commissioners to receive adequate funds.

On the stormwater problem we recommend that there be correction or corrective action taken, and also one of the most outstanding problems is the lack of capacity in the trunk sewer of the Passaic Valley Sewerage Commissioners to handle the flows from the upstream communities daily.

We have had reports in our office from areas such as Warwick, New Jersey, where the sewers back up because they can't get the sewage into the pipes.

Also, in my experience in handling pollution matters, I would recommend that the Passaic Valley Sewerage Commissioners require pretreatment of industrial wastes. I think that is very important, because it would help to stabilize the wastes received at the treatment plant and hence put us in a position to treat the sewage with not too much difficulty.

Due to the problem that I foresee of the totality involved in this, the Hudson River and Upper New York Bay and

Staten Island and Coney Island--New Jersey beaches are also probably affected--what I would like to recommend is that the Federal Water Pollution Control Administration conduct a similar study of the Hudson River and come out with a report; and let's have a conference on the Hudson River to find out how many industrial dischargers you have, and how many pollution discharges you have, and let's find out what is being done about that.

And, also, I am sure that during the New York report we will be brought up to date on these questions, and also the problem in the city of New York.

I thank you for allowing me so much time to discuss this matter.

MR. STEIN: Thank you. Some people may hate you, but I love you.

(Laughter.)

That just goes to show you that professional courtesy is thicker than sewage.

MR. KLASHMAN: Ted, can I get clear in my mind your four recommendations? I didn't understand.

On your first one, you talked about a new approach in the Passaic Valley Sewerage Commissioners involving rates.

MR. SCHWARTZ: Right.

MR. KLASHMAN: How does this --

MR. SCHWARTZ: The first recommendation on Passaic Valley was to enact new legislation, revamp this whole archaic system, and about your people having studied the statutes, copies of which I have given them, and it demonstrates how complicated it is to the Commissioners to operate. I think we have to take an entirely new look on this problem, and there should be a study commission established either by the State legislature or some grant of government to recommend necessary legislative changes.

The second one was the increase in sewerage charges. I think, as your report pointed out--and I agree from the limited knowledge that I have available to me--the sewage rates are rather low in this district.

Thirdly was the pretreatment requirement.

Fourth was the stormwater problem.

And, fifth was the increase in the capacity of the collection system.

MR. KLASHMAN: Well, now on the infiltration problem with the backup, what was your recommendation?

I'm sorry. I did not understand completely what you had in mind.

MR. SCHWARTZ: Well, what we have found from the complaints that we have is that when it rains, or we have high-flow periods during the day, that certain communities can't get

#4 their sewage into the system. The pipes aren't large enough.

MR. KLASHMAN: Well, that isn't the staff's No. 5 recommendation.

MR. SCHWARTZ: Yes, that was stormwater. I guess it goes together.

MR. KLASHMAN: You are talking about infiltration. I'm with you. What you are saying is that the infiltration should be included with it. I'm with you.

MR. SCHWARTZ: All right.

MR. STEIN: Are there any other comments or questions?

(No response.)

MR. STEIN: We appreciate having that detailed explanation, because I think the State of New Jersey has made water pollution control law. Despite the modesty with which Mr. Schwartz described the operations of the New Jersey enforcement plan, as contrasted to other States and the Federal Government, that should not obscure the tremendous accomplishments that they have made in this area and the push that they have taken.

Now, I will say this: Whenever you fellows come to Washington, I will be glad to give you free Thermofax copies of anything (Laughter), and also -- and I really mean this -- if you want to work on this stuff, I would appreciate it if you came to us or to Lester here and asked for the resources

I think doing what New Jersey is doing and New York, we are prepared within our resources; and I may be in a position to draw in the whole country now to try to help you get this material together.

MR. SCHWARTZ: Well, we were very much concerned. As Dick indicated, when the Administration came out with $214 million appropriations for water pollution for this year and the authorization was a billion dollars, and in the House of Representatives they passed a $600 million due to the recommendations of your Department, which we were also very disturbed about, and finally we had some good, strong Senators in the Senate who pushed it up to a billion, we were very much concerned about this. Now it is back over to the House of Representatives, and we hope we can get the billion dollars, because if we do not get the billion dollars but the $600 million, New Jersey loses $13 million.

MR. STEIN: Yes. By the way, this is a moot question on the operation, but you do understand that a part of that recommendation has been as a result of the allocation formula we have.

You know, even if a billion dollars is appropriated, a lot of that may go to States initially for the first eighteen months that can't really use it at the time.

MR. SCHWARTZ: Right.

MR. STEIN: So this is part of it.

MR. SULLIVAN: May I say something along that line?

MR. STEIN: Yes.

MR. SULLIVAN: We happen to be one of the States that is ready to spend a lot more than even the full authorization would give to us, which is $32 million.

We think it would be very interesting to contemplate that many States that are not up to that point of readiness will have their funds redistributed to us at the end of this period.

(Laughter.)

MR. STEIN: All right, but the question is --

MR. SCHWARTZ: They are taking care of the South. That is the problem. In Alabama, they can't spend that money.

MR. STEIN: No, you picked the wrong State.

(Laughter.)

Let me tell you --

MR. SCHWARTZ: I have the records.

MR. STEIN: I will save you some records, but give me the privilege of knocking it off later.

I have, as a lot of you fellows know, worked in the Federal grants field for 25 years. I have no brief for the grants formula provisions of the Water Pollution Control Act. There are many things that technicians would not recommend as to the flexibility of the grants, but they are in the law and we just have to do this.

I think a limiting factor -- and this has always been in this program -- has not been so much the percentage of the grants that we offer but the limitation on the total allocation that any State gets in a fiscal year.

Again, as I say, I have been around a long time. We used to talk about the "Ickes rule" on State grants. Mr. Ickes was a former Secretary of the Interior. He used to say that any bright young guy can figure up an equitable system of grants distribution. I am not sure that that is quite so any more, because we have worked with some of the most sophisticated mathematicians in coming up with these things, but we can do it.

The point is, no matter how sophisticated a system you come up with -- and this is the Ickes law -- unless you get somebody who is going to split the pie, (in those days 48 ways, but now 50 different ways) you are not going to get it through. This is a fact of life in all grants programs. This is something we are just going to have to live with.

Now I would like to mention this one other brief comment on what you said.

You talked in terms of the fact that Passaic isn't the only one, but that New York is a major polluter.

T. A. Schwartz

This is the fourth meeting we have had. The other three have been in New York. We have talked about these New York sources, but in some of these cases, if you try to agree and work this out you can't win, because, on the one hand, when we haven't mentioned the specifics on the Passaic River, you said, "Well, they were not mentioned before and we are caught by surprise." But the thing you can't say is, "Why are you talking about them now?"

Let me give you the thinking of this. I want to say that I am not sure I am the architect of this meeting: I am just carrying out a policy.

But the notion was that we had emphasized other areas of the Hudson River in previous conferences and we had not been to New Jersey and zeroed in on this area, and because of difficulties that were still obtaining, the determination was made -- I think we may be up to a fortuitously pleasant situation in a denouement here, but that wasn't the case when this was called. The thought was that it might be wise, as we do in many cases, to go to another area and put the spotlight on that.

Again, let me say I recognize that this never works. We had the same thing in Toledo. For years we have been going to Detroit and Cleveland on an interstate case on Lake Erie. They have had complete, but I wouldn't say very favorable, publicity in those cities on TV and radio.

Then, once we went to Toledo and there were cries of horror: "Why are you coming to Toledo? How about Detroit and Cleveland."

MR. SCHWARTZ: We are not crying along those lines, but I know you are not the architect of this conference. I know who is (Laughter), and he and I don't see eye to eye, as you probably well know.

But the point is that all of the information has always been available to you concerning our activities on the Passaic Valley Sewerage problem, and you know we have done everything humanly possible, and if you felt that we didn't do everything humanly possible, I am sure you would have started your own action.

As I read the Water Quality Act, it leaves the prime responsibility with the States, and it sort of indicates that if the States are not moving along, the Federal Government might step in.

Now, I don't think that is the case in New Jersey, and I don't think you do.

MR. STEIN: That is why we called this kind of action and did not issue a 180-day notice, because after this you are still going to have the prime responsibility.

MR. SCHWARTZ: What I am driving at is, I don't think, with all due respect to the call of the conference, that anything more can be accomplished than has already been done, which knowledge is available to you.

MR. STEIN: Well, this may be, except I think it will spotlight this, and it will put the Federal Government in the posture of taking appropriate action if this is necessary.

Again, while there may be questions raised, I think the specifics on the names of the places and the names of the people are in this report for a purpose, because I think it clears the desks for appropriate Federal action.

I would hope, and I have every reason to believe, that New Jersey is going to be able to handle this with the people within its constituency, but if it is not, I think it is apparent what this is accomplishing.

MR. SCHWARTZ: Yes. I will make just a comment more.

But it is a shotgun approach. I don't believe that the data you have really supports all the findings you have, and Mr. Sullivan agrees with me.

MR. SULLIVAN: May I make a comment?

MR. STEIN: Yes.

MR. SULLIVAN: This is a continuation, obviously, of the Hudson River Conference, and other sources of pollution were dealt with by previous conferences, most particularly the one that was held in June.

Following that conference, we framed proposed recommendations for the Secretary, who would in turn, under the Federal statute, issue these to all the concerned governmental agencies. Those recommendations have not yet come forth from the Secretary after the June conference.

I wonder if in the final outcome of these two sessions the findings of both sessions will be merged, so that all of the sources of pollution in the Hudson, including Passaic Valley and New York City and all of the others, as well as those in this enlarged area of the conference, can be handled as a single set of recommendations.

MR. STEIN: Yes. I don't know that I can answer that because I don't make the decision on that, but I think this might be appropriate for the conferees to take up in the executive session, and then you can make a recommendation on that.

I don't want to promise you people that I can deliver something that is beyond my authority.

However, I will take your views back, certainly, and present them to the people who do make that decision.

MR. SCHWARTZ: Of course, as we read the law, Mr. Stein, it indicates that the Secretary has to make recommendations, and we have not had any recommendation from the June conference, and we don't think you have the authority to reconvene

THIRD SESSION

CONFERENCE ON POLLUTION
# of the
HUDSON RIVER AND ITS TRIBUTARIES
(NEW YORK - NEW JERSEY)

at the
GEORGIAN ROOM
ROBERT TREAT HOTEL
Newark, New Jersey
November 25, 1969

AFTERNOON SESSION

2:10 p.m.

AFTERNOON SESSION

(2:10 p.m.)

MR. STEIN: Let's reconvene.

Will you please take your seats? We are going to reconvene.

We will now call on the Passaic Valley Sewerage Commissioners. I understand that they are being represented by Mr. Seymour Lubetkin.

Mr. Lubetkin.

STATEMENT OF
MR. SEYMOUR A. LUBETKIN
CHIEF ENGINEER
PASSAIC VALLEY SEWERAGE COMMISSIONERS
NEWARK, NEW JERSEY

MR. LUBETKIN: Gentlemen:

The Passaic Valley Sewerage Commissioners are very happy to have been invited to this conference (Laughter) -- it's hot up here -- although we admit we were very surprised the conference was called. We had no idea the Passaic River was part of the Hudson River Enforcement Conference. Nowhere in any of the previous conferences had this been indicated, and although we are happy to be here and possibly get some favorable publicity for a change, we were very chagrined as to how we were invited.

It appears that the Federal Government does not merely send invitations for fact-finding, but, at the same time, it feels necessary to submit statements to the press which contain threats. Maybe they feel this is necessary because the Passaic Valley, for one, found out about this conference through the news media. News of the conference, together with criticism from Secretary Hickle, were in the Sunday News on September 7th, and in other papers on September 8th, and only after I called Metuchen and Trenton did I receive any information concerning the conference, and only after explaining we received no such invitation was I assured that an invitation would be forthcoming.

From the newspaper reports I didn't think it was going to be an invitation but more or less an order. We finally received an invitation. It was dated September 10, three days after the article appeared in the newspaper.

Incidentally, after we heard about the conference, I requested a list of the other industries that were invited to the conference, supposedly 40, so that I could check any pollution records against what records the Commissioners had. We asked many of these industries if they were approached by the Federal Government concerning alleged pollution, and if they were invited to the conference. Of those that we had asked, none would admit being invited, and professed ignorance of the conference. It appears that somebody crossed wires somewhere.

Well, this is why there were no replies to Mr. Sullivan. But the whole threat idea is silly, because we want more than anybody else to remove pollution from the river. In fact, the Passaic Valley Sewerage Commissioners have from the moment of their existence been for the elimination of pollution in the Passaic River. We have done more for a longer period of time, and are continuing to do more to eliminate and remove pollution from this river, than any other authority from any other river in the United States.

For the Federal Water Pollution Control Administration to say "there is a lack of cooperation" makes the Commissioners wonder, are they really cognizant of the true situation or are they really abusing the power of the Federal Government? I am not blaming the new Secretary. He cannot possibly have first-hand knowledge of what is going on, but I do blame the technical and career men who must be passing on incomplete information to him. Are they so unaware of the power of statements issued by the Federal Government that the abuse of this power is second nature? When statements are issued by a Cabinet member, newspapers publish them as facts, regardless of what is contained therein.

S. A. Lubetkin

I am going to digress from my prepared statement at this point, because I just received this clean waters report this morning, which gives the State of New Jersey, which received it last Friday, several days' advantage over me.

I was very surprised at some of the statements in there. I feel it is not an unbiased report but made specifically to attack the Commissioners.

In several statements made by Mr. Sullivan and Mr. Schwartz, they implied that the State and the Federal Government were cooperating. There were no statements made that Passaic Valley didn't cooperate, but I hope, and I want to clear the record, that they did not mean we were not cooperating. At any time we were asked for information, the information was forthcoming. Unfortunately, nobody saw fit to allow us to look at this report and check this factual statement.

In view of the short period of time which I have had it, I may omit some falsities in here, but I would like to go over the few statements that I did manage to catch and try to correct them for the record.

Statement, Page VIII:

> "The Passaic Valley Sewerage Commissioners have not initiated adequate action to comply with the conference recommendations for needed treatment facilities."

S. A. Lubetkin

I think everybody here, including the press, knows that one of the reasons actual physical work has not started was because of lack of funds.

You have heard that our bond legislation was passed. It needs the signature of the Governor, and then the Commissioners will be adequately funded to move on this tremendous program.

But the Commissioners have not waited on this. The Commissioners have moved on studies.

There was a statement made earlier that the Commissioners, since their inception, have done nothing. The Commissioners have expended $15 million in the last fifteen years, above and beyond its operational maintenance costs, to make many corrections, and we are ready, and we have so stated at the third session, that we would intend and move towards compliance with the Hudson River Enforcement Conference recommendations, even though we may not be in agreement with some of those recommendations.

On Page 2, there is a statement concerning inspection, that twenty of sixty basins were out of operation and, "It appeared that routine maintenance of the operating basins was not adequate to insure their proper operation."

Well, No. 1, we don't have sixty basins. There are basically sixteen basins, with sixty-four sub-basins. Either way, the boys didn't seem to be able to count.

Both the Federal and the State people know that the Commissioners have a problem with their grit facilities. We have told them this. We are drawing plans and specifications. We will be ready to construct new facilities the beginning of 1970 to remove the grit before it reaches our basin.

Right after any storm, grit reaches the basins, and there are tremendous breakdowns. The implication here, however, is that these breakdowns stay that way. That is not so. They are repaired as rapidly as possible.

This so-called ratio of 20 to 60, which I question since they couldn't count to 64, is not an average nor a standing thing. In many cases, 80 to 90 percent of the Commissioners' basins are operating. However, if you should visit the plant immediately after a rainstorm, there will be breakdowns, and there is nothing in our operational procedure that can prevent this. The only thing will be the new grit facilities, which we wish to have and which we will apply for Federal aid for.

On Page 12, Mr. Bromberg referred to all the reports, and his reference was such as to imply we put the reports on a shelf and that was it.

Let me go over it. No. 1, the Bogert-Childs report on improving sedimentation basins, May 1951.

The Commissioners' old sedimentation basins were hopper bottom, involving over 124 separate valves. They were virtually impossible to maintain properly, and treatment was almost impossible.

This report was implemented. The basins were completely changed to 16 major basins, mechanical equipment installed, and, in fact, there was quite a bit of publicity around 1958 concerning the cost. The cost of that improvement was in excess of $5 million.

The next report is the March 1952 report on Critical Situation as to Steam Power.

The Commissioners' pumps were installed in 1924 and had been running continuously for 24 hours a day since then. They were in poor condition, breakdowns quite considerable, and new pumps had to be installed.

This report was implemented. Two new electrical pumps were installed during 1954 and 1955, when the old pumps were removed.

Now, elsewhere, Mr. Bromberg made a statement about our bypassing, and he pointed out that in 1954 we bypassed when there was no rain.

If he had asked us, we would have told him that was when we were installing new pumps and the remaining pumps just could not handle the normal flow, and there had to be a short period of bypassing.

We notified the press; we notified everybody, so that they would understand that this dry-weather bypassing was a temporary thing until the new pumps would be installed.

Since Mr. Bromberg didn't get this information from us, maybe he got it from the press.

Next is a report on repairs, replacement and improvements of 1954.

This, of course, was part of the new basins that were installed. The contracts were let in 1955, and completely new sludge handling facilities were installed.

Prior to that, the basins had to be cleaned, sludge put into a barge that had to be waiting at the dock. If the barge was not there at any time, the sludge could not be removed from the basin, and nobody who knew anything about the elements of sewage treatment would realize that the gasification of sludge would cause it to rise, overflow and cause a tremendous pollution problem, but the Commissioners did install sludge-handling tanks, and 15 tanks, as per this report.

The report, incidentally, also recommended improved grit facilities. Unfortunately, or fortunately, depending on which side of the fence you happen to be sitting on, there was a change of administration in 1958, and, unfortunately, the previous estimates to put through the improvements were $9,100,000, and in excess of $10 million had been expended prior to the implementation of the installation of the new grit facilities.

This was all the money the Commissioners had from a bond issue. They had no authority to get more money. The Commissioners were therefore forced at that time to abandon the proposed new grit facilities, and instead new consulting engineers were hired (Metcalf & Eddy) who made a further report, and in their report they recommended as an economy measure that the old facilities could be renovated at a fraction of the cost of the new ones. The new ones were estimated at $7 million to $8 million. The renovation of the old facilities was made at a cost of $400,000.

Now, you have to remember that in 1958, when this was done, we had no way of getting additional money. We did not pretend that this was a substitute for new facilities, but we hoped it would carry us over until arrangements could be made for funds, so that the Metcalf & Eddy reports of 1960 and 1962 were both implemented. The screens were renovated, new diesel engine pumps were put in, and additional sludge-handling facilities were put in to double the Commissioners' capacity to handle the sludge.

When we realized that doing the renovation while buying us some time would not be satisfactory, the Commissioners hired Manganaro, Martin & Lincoln and asked for a report #5 on completely new head end facilities -- that is, the grit chamber, the screens, and all those pieces of equipment that would keep the solid material out of the basin, the mineral material, to avoid the breakdowns which we got.

The report was given, and Manganaro, Martin & Lincoln were authorized to make plans and specifications to implement this report. These plans and specifications are expected to be completed in April of 1970.

The cost of this improvement will be in the neighborhood of $8 million. We will at that time apply for Federal aid; and if, with the Federal, State and our own bond issue, the funds are forthcoming, we will proceed immediately to build this; but if it is like previous applications -- for example, in our sludge-handling facilities there is a delay on the funding of as much as five years -- then we will be delayed through no fault of our own.

It is true they can say, "Well, you don't need our funds. You must do it. Go and spend it yourself." But, how would the taxpayers in our area feel when legally we are entitled to 70 percent aid and we fund the whole thing from their own pockets?

Manganaro, Martin & Lincoln proposed chlorination facilities. This was something the Commissioners had intended to do immediately. At that time, we hoped to upgrade our primary treatment plant and chlorinate it.

We believe in chlorination. I don't want anybody to say Passaic Valley is against this type of thing.

When they speak of pollution in New York Harbor, this is a very nebulous term. They talk about what goes on at beaches. I am sure that bathers nor do many other people care about BOD on the beach. What you do care about are the pathogenic organisms, and we are in sympathy with this and we want to do something about it.

We wanted to proceed immediately with upgrading the primary plants, install the chlorination facilities, and then move for secondary facilities which would remove the BOD, but we were more or less told that the whole thing must be done as a package unit.

To install chlorination facilities at this moment, in view of the change of type of treatment, would be an extreme waste of money because the type of chlorination is entirely different for the primary plant and the secondary plant as far as volumes, etc. The chlorine demand of a primary effluent is much higher than a secondary effluent.

Second of all, at this moment, and this is not a criticism of New York City -- I don't particularly like to throw rocks -- they have a big job, and I believe they are proceeding, but at this moment there is no chlorination of the discharges of Manhattan and many other outlets.

I don't know how anybody picked up bacteria at one of the beaches and said this was Passaic Valley's. Were they labeled? I mean, if we were to remove all our waste of it at this moment completely, there would still be infection or bacteria in the sample from the New York discharges.

Again, Marty, I am not criticizing you. I know that you have a program. The point is, these things are not implemented overnight.

Nobody here has cared to make a statement that the standards of just a few years ago, where there was 30 percent oxygen saturation, and they were only upgraded to 50 percent in relatively recent times. And when you look at those charts that were shown before, they are above the 30 percent. We had maintained the original standards set by the Interstate Sanitation Commission and others.

Going on, on Page 14, the report states:

> "This operational practice, which was necessary to protect the Newark Bay Pumping Station from flooding, often resulted in the opening of the by-passes during non-rainfall periods. For example, during the period January-September, 1953," --

S. A. Lubetkin

Well, gentlemen, I think I have explained that this is not normal, but the Commissioners were replacing pumps that were installed in 1924.

Now, if this is done once every thirty years, I don't think that this is considered poor operational practice. The implication there is that we arbitrarily opened gates, and this I violently protest.

The other statement by Mr. Bromberg that our system consists of two interceptor sewers, our main one and the Newark South Side Sewer, is absolutely false. The Newark South Side Sewer does not belong to the Commissioners. This is a city sewer and is just as much an interceptor as the Union Outlet Sewer, which belongs to a number of municipalities, and several other so-called interceptors that connect to the Passaic Valley trunk sewer.

The Commissioners have no control over this South Side Sewer, and just accept this effluent, just as they accept the wastes from any other sewer that discharges to us.

The report mentioned a faulty valve. The Commissioners mentioned it also. The valve belonged to the city of Newark. The Commissioners ordered the city of Newark to repair it. The State of New Jersey ordered the city of Newark to repair it. But, by implication, this statement in its location in this report is that Passaic Valley was negligent.

S. A. Lubetkin

On Page 17, the report states:

"The 1954 report revealed that one of the Gate House sluice gates was inoperable."

Well, gentlemen, it was, and it was repaired in 1954, and in 1956 they were completely removed and all new gates and a hydraulic system were installed.

If anyone had thought to ask us, we would have been glad to tell them, but in the preparation of this report the only question asked of us was whether we could identify 50-some-odd outlets. I told them it was very difficult because of the description of the location that we had more than 400 outlets, and we would be glad to identify those, and I would present it at this meeting.

But, in making this report we were not contacted by the Federal Government. We could have clarified many issues if they had felt like just presenting facts instead of accusations.

On Page 19, the report states:

"Three sludge lagoons have been constructed adjacent to the sludge tanks to receive scum and supernatent from the thickeners, thickened sludge from the storage tanks and for emergency use purposes. At the time of an inspection by the Federal Water

> "Pollution Control Administration in June 1969, it appeared that these beds were not being operated as intended. Weeds were observed growing in the beds."

Now, I don't know how they thought they were supposed to be operated, or what was intended. Those were emergency beds, to be used only if there was a tugboat strike, or if the sludge barges were not available. Since the construction of those beds, they have not been used because we have had no emergency.

As far as weeds in there, these things are on the water and they are completely saturated. There is always a little growth. The weeds would not affect their use when and if we need them, and I hope we never need them.

On Page 23 there is a discussion of our Governeur Street repair. What was said here is factual, but the implication by what is omitted is that the Commissioners didn't care about the public. Nowhere here do I see a statement that the Commissioners originally made the recommendation to repair the outfall with this temporary bypassing, because the cost of that repair would be approximately $500,000, and the costs of the repair, as we are going to do it, with pumping them out, will be $3 million.

The whole implication here is that we disregard everybody.

S. A. Lubetkin

Gentlemen, we were trying to save two and a half million dollars to use for other things. We didn't feel at that time that this was a thing that would have a permanent detrimental effect on the river or the public.

However, at the hearing it appeared that the public wanted us to spend this money, and therefore we are proceeding with a pumping station around it, but I am pointing out that we will receive bids on this on December 10th, and the chances are the costs of this will be in the $3 million range, as opposed to the original half million dollars.

Page 25:

> "Much of the inefficiency of the settling tanks can be attributed to the poorly operated and inadequately sized grit chambers."

He is right about the inadequate size. They cannot be operated any better than they are. They are not constructed to accept storm wastes, and that is a fact.

I defy Mr. Bromberg, or anybody else, to tell us how to operate them more efficiently than we are. The physical structures themselves make it impossible to keep grit out of the basin with the high flows involved, and I resent the implication of "poorly operated."

Page 29:

> "Most of the municipalities and industries in

"the conference area except the Passaic Valley Sewerage Commissioners are moving ahead to meet the conference recommendations."

This is not a fact. We are moving ahead. We cannot meet your timetable, but neither will many of the other municipalities.

At the third conference I gave a timetable where we expected to meet it. I will repeat that timetable today in the latter part of my report.

But the Commissioners are moving ahead, and we feel that the State and the Federal Government, if they desire any detailed information, could get it and they would realize we are moving as rapidly as possible.

We have a contract right at this moment on the studies and we just can't rush those things. The studies must be made. It would be ridiculous to spend $100 million and find out the $100 million you spent won't do the job you wanted.

I noticed when you studied the Passaic River and you talked about DO, dissolved oxygen, Page 36, you did point out, and the drawings indicate on Figure 10, that the dissolved oxygen coming over the dam of Great Falls, which is the limit of our jurisdiction, showed between 5 and 6 parts per million, and that within the Passaic Valley area between the Great Falls and Dundee Dam, the water improved, and only after it went over Dundee Dam where we reached the tidal section where the effects of Newark and so forth are in, did the water degrade.

This was glossed over very quickly, but the water coming into the Passaic River over the Great Falls into our area is not of the highest quality, and within our area this water improves in quality, and it is only when we get to the tidal stretches that the water degrades to the point that neither you nor we like it, and I will go into detail as to what we do about it.

There are many other points, but, as I said, I have not had a chance to go into this in detail, and I did not have this in enough time to go over it.

But you do mention things -- not necessarily in this report, but, for example, Mr. Sullivan mentioned about hitting debris. The Commissioners have no authority over debris, on the banks. We have notified each municipality on this river that it is their responsibility to clean the debris from the banks, so that it does not reach the river and give it the unsightly appearance.

A lot of the outlets seen, according to your report, were flowing during dry weather. Most of them contained cooling water, which is relatively clear, and nonpolluting, except possibly for thermal pollution.

S. A. Lubetkin

Unfortunately, thermal pollution has not been defined specifically with parameters by the State as of this moment. I have been in contact with the State many times in order to determine what shall be considered thermal pollution and what shall not be considered thermal pollution.

The only answer I get is that they are studying the matter, and as soon as any report is available it will be submitted to me.

As soon as we have guidelines in which to fairly administer a thermal pollution oroblem, we will so do, but until this time we feel it would not be right to go after one and let someone else alone.

I will continue with my prepared speech.

The Commissioners are cooperating and are moving as rapidly as possible within their financial limitations, to do what is requested by the HREC, and they are doing this even though some of the requirements are not considered by the Commissioners to be in the best interest of the taxpayers in this area, and will serve no benefit to the people anywhere. The fact that the Commissioners may question what is to them an arbitrary ruling is immediately questioned by certain people as noncooperative. The two sides of the coin are not examined. I expected this from the Federal Government, but what did surprise me is that even the newspapers in this area didn't attempt to analyze what was being said, but merely published the Federal Water Pollution Control Administration statement that the Commissioners were uncooperative.

I had previously asked Mr. Klashman the reason for the sludge digestion requirement prior to disposal in the ocean. I received a strange answer, that Mr Klashman could not know what was in the mind of the Secretary when he issued this order.

Now, this is strange because we all know the Secretary is guided by his technical and career employees, and if the Secretary gave such an order it was based upon advice given to him by those around him. I presume if I asked Mr. Klashman the same question today, why do you require sludge digestion prior to disposal in the ocean, I would receive a different answer, since he has had plenty of time to think about it. He might say that studies have shown that there is a depletion of oxygen in the sludge disposal area, and I believe that somewhere a statement was made that samples have shown no life in that area.

That the area may be lower in oxygen I do not doubt, but considering the small size of the area as compared to the size of the ocean, this is not calamitous. That the area is lacking in life, this I do doubt, since nature has a way of supplying different types of life for different environments. There are what is known as anaerobic bacteria which will thrive in areas depleted of oxygen and will consume the sludge as food. Actually, the above two statements are beside the point. The fact is that sludge digestion does not disinfect and therefore cannot be used as an argument for the prevention of disease propagation.

The fact is that digested sludge still has a very high BOD content and will deplete oxygen from the area. The fact is that digestion will do very little to change the environment of the dumping area. But that one requirement of digestion could possibly cost the Commissioners forty million dollars in construction costs plus additional undetermined operational costs each year.

Wouldn't it be far more economical and better for all concerned to move the dumping area to a location farther out in sea, if there appears to be a problem, rather than require digestion.

Now, the fact that we question this requirement does not mean we would not comply. The Commissioners have gone on record that they will comply with every requirement of the Hudson River Enforcement Conference as quickly as scientifically possible within the resources at their disposal. But it appears that not only must we comply, we must not question the all-powerful authority in Washington which lays before us the tempting fruit of a Federal aid program. The fact that this requirement in no way affects either the pollution of the Passaic River or even New York Harbor does not seem to get through to the public, who immediately, when we question a Federal requirement, seem to think we are against pollution control.

This is not so. The only thing we are against is the expenditures of money which will give little or no pollution control return -- money that could be spent for a true pollution control. So, in a sense, when you consider limited funds, the Federal Government is the one that is against pollution control, and I so accuse them.

It seems that everybody is working on the premise that there are unlimited funds to do everything everyone desires. The fact that the Federal Government may have a billion dollars for grants, the fact that the State of New Jersey will have approximately $242 million from a bond issue, should not make the public feel that ample funds are available.

Gentlemen, believe it or not, both of these are just starts and, therefore, priorities are important. Priority in the sense that money should be spent on those parts of a project that will give the greate pollution control return and everything cannot be done at this time gilt-edged. I happen to think it is better to construct those things that are most important first and then gild the lily.

This situation reminds me of a man who is out in the cold and rain and he desires to build a shelter, but he is prevented from doing so unless he builds a castle with gold walls and emerald windows, and not having the wherewithal to make such a structure he must endure the storms and the cold because he is not allowed to build a simple wooden shelter. This, I'm afraid, is what our pollution control program in this area seems to be leading to.

But I must caution you not to interpret this statement as a statement that the Commissioners will not cooperate. The Commissioners have and will continue to cooperate in every way to abide by the rules and regulations of the Federal Water Pollution Control Administration, even, unfortunately, if abiding by those rules prevents the Commissioners from eliminating some pollutions as rapidly as possible.

The Passaic Valley Sewerage Commissioners, as we know them today, were organized in 1902. At that time the Passaic River had degenerated to an open sewer, which generated hydrogen sulphide that would literally peel the paint from the homes, where the odors were detected for miles. The putrefication was beyond what you would conceive of today. The Commissioners were formed as a policing agency, to halt the pollution of the Passaic River and its tributaries between the Great Falls in Paterson and the mouth of the Passaic River at Newark Bay. There was also enabling legislation whereby the municipalities within the defined district could request the Commissioners to make a study and construct a trunk sewer and treatment plant, the cost to be borne by those municipalities. Construction was started in 1912 and completed in 1924, when the system went into operation.

Since that time, the Commissioners have treated and disposed of the sewage from the district and also policed the Passaic River Basin below the Great Falls. The system was a primary treatment plant which was considered all that was required at that time.

The discharge of the treated effluent went to New York Harbor. As important, but not receiving the publicity, is the policing problem the Commissioners had, and have today. There are more than 700 industries along the banks of the Passaic River and its tributaries in this small stretch. The Commissioners have ten river inspectors who patrol this river and take samples when they feel a pollution is occurring. The Commissioners have the power to take polluters to court if they will not comply with the antipollution regulations set up by the Commissioners and by statute.

During the years, thousands of pollutions were brought to the attention of individual industries and were brought under control by the Commissioners, long before other enforcement agencies even thought of pollution control. As an example of the work done by the Commissioners, I am submitting here a report to the Commissioners of pollutions corrected during 1968.

I have given a copy to the reporter and a copy was given to the Federal Government.

MR. STEIN: I don't have a copy, and I would like to see it before I can rule whether it is entered into the record.

Is this what you are referring to (indicating)?

MR. LUBETKIN: Yes. Right.

MR. STEIN: Without objection, this will be included as an exhibit.

(Document entitled "Pollutions Corrected During 1968" dated January 31, 1969, was received as Exhibit No. 1 and will be found in the files of the Federal Water Pollution Control Administration, Washington, D. C., and the Northeast Regional Office, Boston, Massachusetts.)

MR. LUBETKIN: This particular item lists all the pollutions that were brought under control by the Commissioners during the year 1968, and those which were carried over to 1969.

I am submitting, at the same time, a copy of a monthly report which I submit to the Commissioners. This is the latest copy showing stream contaminations during the month of October 1969.

MR. STEIN: Is this dated November 7th?

MR. LUBETKIN: Yes, sir. That is when it was submitted to the Commissioners.

MR. STEIN: Without objection, this will be included as an exhibit.

(Document entitled "Re Stream Contamination Report, October, 1969," dated November 7, 1969, was received as Exhibit No. 2 and will be found in the files of the Federal Water Pollution Control Administration, Washington, D. C., and the Northeast Regional Office, Boston, Massachusetts.)

MR. LUBETKIN: For the record, there were 35 pollutions discovered by the Commissioners in 1968 which were corrected due to the Commissioners' interventions during that time, as follows:

Alexander's Department Store, Routes 17 and 4, Paramus, New Jersey -- January 1 to July 12 -- pollution of Sprout Brook. This was eliminated when they finally reconnected a treatment plant which was inadequate to the Paramus system.

Borough of Fairlawn -- four separate pollutions. On February 14, an oily film in Henderson's Brook was traced to the Fairlawn Public Works Department's screen. On May 15 and 16, a blocked sanitary sewer on River Road caused a discharge of industrial waste into Henderson's Brook. On August 23-30, a temporary sanitary line running along Henderson's Brook was leaking. This was repaired. On September 26 to November 1, bypassing of Fairlawn sewage into the Passaic River was discovered by the Commissioners. The Commissioners required the Borough of Fairlawn to clean their river crossing, thus eliminating pollution.

B. L. Lemke, Main Street, Lodi, New Jersey, was discovered pumping a highly colored material from their cellar into Main Street and thence into Saddle River. They were required to halt this operation and transfer the pumping to the sanitary sewer.

Borough of Lodi -- Hendrick's Pumping Station. Oil slicks were traced to an overflow outlet of this station. The Commissioners required the Borough to clean out the suction pit so that there would be no overflow. The Commissioners have also taken the Borough to court to have an additional pump installed so as to eliminate pollution when a pump fails.

Marcal Paper Mills, Market Street, East Paterson.

On March 19 the Commissioners' sampling indicated that their discharge was polluting. After investigation it was discovered that there was a point where untreated sewage was leaking into their effluent line. This was repaired and the violation eliminated. A second violation from this company was found on June 11th, when oil in the river was traced to Marcal. A leaky sump pit was discovered which was sealed off, halting the pollution. Two other violations, December 3rd, and one on December the 19th, were detected by sampling, but the reason could not be determined and both apparently corrected themselves on subsequent samples.

Podell Industries, Midland Avenue, Saddle Brook -- March 5-25, 1968. Samples of discharging of Podell Industries to Schroeders Brook were found to be polluting. The company was required to repipe this material to remove it from the river. On October 10th a paint pigment in Schroeders Brook was traced to this company. After several letters to the company, wherein they were ordered to cease pollution, the company purchased equipment which would remove this waste from their discharge. There were several intermittent pollutions before this matter was corrected.

Borough of Fairlawn -- Radburn Sewage Treatment Plant. Fifty-two samples were taken of this plant during the year, of which twenty-four were considered unsatisfactory.

Generally speaking, there was coliform in the unsatisfactory samples, even though there appeared to be sufficient chlorine. The operator was notified and he informed us that construction is occurring to renovate the plant, increasing detention time. The construction was expected to be completed in 1959 to solve this problem.

Universal Diesel and Gas Rebuilders, Inc., South Hackensack, New Jersey. Oil and motor wash detergents were being discharged directly into Feld's Brook. After being directed to cease pollution by the Commissioners, they installed a 1,000-gallon tank and diverted the material away from the brook. When the tank is filled, they arrange for this material to be pumped out and carted away.

Ridgewood Sewage Treatment Plant. Of 58 samples taken during the year, 15 were unsatisfactory. In each case, the superintendent of the pollution plant was informed and corrective action was taken.

Manhattan Products, Lodi, New Jersey. The Commissioners found that pollution was being caused by periodic spillage from packaging plants on the floors which were reaching Saddle River, via the floor drains. Upon being notified of this by the Commissioners, the firm reconnected its floor drains to the sanitary sewer and sealed off all outlets to the river.

S. A. Lubetkin

Acme Refining Corporation, Newark, New Jersey. Oil in the river was traced to the Brown Street Sewer, thence to this company. An investigation showed that on or about July 30, a valve in a waste oil tank was left open, releasing oil to the rear of the plant. Upon being informed of this, the valve was closed, some oil was pumped back into the tank and the residue buried in the ground. Another source of potential violation also shown to the officials was empty oil drums stacked upside down, allowing residue oil to drain into the catch basin. Officials made arrangements to move these and halt this practice. Our inspectors check this weekly.

Atlantic Chemical Company, Kingsland Road, Nutley, New Jersey. On June 17th a pipe in the rear of the plant burst, allowing red dye to enter the ditch and thence to Third River. Temporary repairs were made to stop the flow into the ditch. On August 10th, there was a spill in the yard of this plant, and purple dye reached the ditch. Generally speaking, there are intermittent violations from this plant due to ground seepage and saturated condition of the ground from past poor housekeeping. The Commissioners have notified this firm that they must clean up the ground area and remove residue dyes, which intermittently leak into Third River. The company is digging up areas where they suspect openings in pipes and are replacing bad pipe.

City of Newark -- Delavan Avenue Storm Sewer. A blockage in the sanitary sewer caused an overflow into the Delavan Avenue Storm Sewer, which discharged into the Passaic River. The city was notified; they cleared the blockage and the violation was eliminated.

Rheingold Brewery, Hill Street, Orange. A sample taken of their cooling water discharged into the storm sewer was found to contain a large amount of ammonia. Officials of the brewery were contacted and upon investigation they determined there was a broken line from their ammonia tank. The tank was drained, the line was repaired, thus eliminating the pollution.

Washington Street Storm Sewer, Orange, New Jersey. This is a large storm sewer discharging into a tributary of Second River, which is a tributary of the Passaic River. Intermittent pollutions from this sewer finally caused the Commissioners to go to court. An injunction was issued against the city of Orange and repairs were made to this sewer. However, it is to be pointed out that the sewer is an old sewer, and although the repairs in cracks and plugs were installed to halt obvious pollutions, there is still seepage and occasional pollutions when temporary plugs were opened. The system will have to be completely rebuilt. However, as of the end of 1968 there was no pollution from this sewer.

City of Clifton. A discharge of sanitary and industrial waste in Weasel Brook was traced back to a storm outlet in Clifton. The city was notified, a blockage in the sanitary line was uncovered and cleared, and the pollution halted.

Fabricolor Manufacturing Company, Paterson. A red color in the river in the vicinity of West Broadway Bridge was traced to this company. The violation was called to the attention of the company officials, who proceeded to locate the cause. They found a blockage in the industrial line, which caused waste to overflow in the river. Upon digging up the ground to repair the blockage, they located a broken sewer, which was repaired.

Borough of Hawthorne. This borough discharges into the Passaic Valley system in Paterson. The city of Paterson has a combined sewer and during storms many times the sewer surcharges into Paterson causing a backup to go into the Borough of Hawthorne. During these times an emergency condition exists and an outlet is opened into the Passaic River. As soon as the sewer recedes sufficiently, this outlet is closed.

Harmony Industry and Realty Corporation, Paterson. On April 25th, the oil in the Passaic River was traced to this company. It was discovered that boiler operators had dumped five or six pails of Bunker C oil, which then found its way into the river. The plant engineer was notified that this practice must cease immediately and he promised that the firemen and helpers would be so ordered, and that excess oil would be dumped back into his tank.

Interchemical Corporation, Hawthorne. This is now the Inmont Corporation. A green color in the Passaic River was traced back to this company. This company is a manufacturer of fluorescein dye and the dust on the roof and other areas was washed by the rain into the river, thus giving the green condition. A conference was held with this company to determine methods of reducing this dust so as to avoid this type of pollution in the future. It was agreed that scrubbers would be installed in their stack and also sections of their yard would be piped to a treatment plant, so that this material could be oxidized with chlorine beforc being discharged to the stream.

Paisley Products, Division of International Latex and Chemical Corporation, Clifton, New Jersey. The problem with this company was the many spills they had in their loading and unloading area. This material then reached the storm sewer catch basins and went to Nichol's Pond in Nutley, causing pollution and unsightly appearance. On October 23, the Paisley Products official wrote to the Commissioners stating they would re-pipe certain areas of their property so that polluting material would go into the industrial and sanitary sewer, rather than the storm sewer. This was completed during 1968, and the pollution was halted except for two subsequent accidents. On April 2, one of their tank trucks spilled while unloading with about 50 gallons of liquid starch reaching the sewer. On September 20, a truck driver, while making delivery to a plant, disconnected a hose which had not been emptied properly. The chemicals ran off into one of the yard drains that was still connected to the storm sewer, thus reaching Nichol's Pond. The company was required to connect the remaining yard drains to the sanitary sewers.

J. L. Prescott Company, Passaic, New Jersey. Detergent in the river was traced back to this firm. A fork truck unloading detergent had broken the drum of the liquid and the material was washed off the platform into the yard drains, which then reached the river.

Regal Dyeing Company, Paterson, New Jersey. Colored material in the river was traced to this company. Upon notifying officials, it was discovered that a sewer leading from the plant to the Paterson sewer was inadequate to take the volume required, and that material overflowed from their boil-off operation, reaching the floor drain and thence through floor drains to the Passaic River. They were notified to cease pollution. The firm replaced the small pipe with a larger pipe, giving it more capacity, and halting the pollution.

Ultra Division of Witco Chemical Company, Paterson. There had been intermittent pollutions from this plant from spills near a catch basin located in a loading area. A conference was held with the officials on May 9, 1968, to see if they could re-pipe the two catch basins involved from the storm sewer into the Passaic Valley trunk sewer, so that loading spills would not reach the Passaic River. This work was completed June 29, 1968. On August 26, while the company was cleaning some tanks, water containing detergent spilled and went directly into the river. The company immediately halted this method of cleaning when warned by the Commissioners.

Whippany Paper Board, Clifton, New Jersey. A pollution in the Passaic River was traced to this company and they were notified of a break in their sewer line, which was seeping through the ground to the river. They hired a contractor, opened the sidewalk, found the source of the trouble and repaired it.

White Metal Manufacturing Company, Hawthorne, New Jersey. A strip coiling machine leaked oil from one of its cylinders. The oil had reached a drain together with cooling water and went to a storm sewer, thence to Goffle Brook, a tributary of the Passaic River. When notified by the

Commissioners, the cylinders were repaired and the pollution ceased.

Several pollutions which occurred in 1968 were not halted by the end of 1968, but were carried over until 1969. They were:

Curtiss Wright Corporation, Passaic Street, Wood-Ridge, New Jersey. Oil slicks in Feld's Brook were traced to this company several times. It was indicated that there was an underground oil leak from their oil separator. The separator was repiped with overhead piping and the underground pipe was completely abandoned. On January 25, a green material in Feld's Brook was traced to this plant. It contained silver, lead, and mostly copper. It was traced back to the plating department. Pollution ceased the same day.

Investigation revealed that the pollution occurred when changing filters in the plating department. This procedure has been stopped and a new method of changing filters has been developed that will preserve the material. On May 2, a pump failure in this plant caused a slight pollution into Feld's Brook. This was corrected within a few hours.

On May 23, slight traces of plating ingredients were found in Feld's Brook. This material escaped again when cleaning filters. The company was again warned that more care would have to be exercised to prevent a reoccurrence.

On July 16, an overflow of the chrome plating ran into Feld's Brook. The pipes from this operation were reconnected to the sanitary line during their shutdown in August.

On December 3, oily films were again detected in Feld's Brook and traced back to this company. The company informed the Commissioners that the problem was involved and that Dorr Oliver had been called in to make the study for equipment to halt the pollution. The pollution was finally halted in 1969, after extensive changes were made to their oil removing systems.

Ten-Da Brand Foods, Inc., South Hackensack. This is a small meat packaging plant. Floor washings and residues from cleaning its meat packaging equipment contained polluting material and were washed into Feld's Brook, a tributary of the Passaic River. The area containing this plant has no sewers. South Hackensack has agreed to install sewers and have this material discharged into the Passaic Valley system. Under the circumstances, it would have been a tremendous and needless expense to force this company to build a treatment plant for its small amount of waste.

Unfortunately, legal delays have prevented the actual installation of this sewer to date. However, we have been assured by the Borough of South Hackensack that these sewers will be installed shortly. In fact, a letter received by the Commissioners on September 26, 1969, informed us that the plans were in Trenton and were awaiting approval from the State Department of Health. We were asked to check with Trenton to determine the cause of the delay. I wrote a letter on September 29 to the State requesting information and pointing out the Commissioners were interested because of a pollution in this area.

Upon receiving no answer to my first letter, I wrote a second letter on November 3, again requesting information concerning this sewer. As of this date, I still have not heard from the State Department of Health. Ten-Da Brand can in no way control the speed that South Hackensack moves, nor can they control how rapidly approval can be received from the State Department of Health, and the Commissioners feel it would not be fair to cause them to install a complete treatment plant in view of what is going to happen. But we would like to know from the State what takes so long to answer our communication.

Fashion Center, Ridgewood. This shopping center did erect a sewage treatment plant which went into operation in February 1967; however, the discharge from this plant, which goes to Sprout Brook, a tributary of the Passaic River, was intermittently polluting. Either the plant was not large enough or the control was not good. After considerable sewers will be installed shortly. In fact, a letter received by the Commissioners on September 26, 1969, informed us that the plans were in Trenton and were awaiting approval from the State Department of Health. We were asked to check with Trenton to determine the cause of the delay. I wrote a letter on September 29 to the State requesting information and pointing out the Commissioners were interested because of a pollution in this area.

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City of Newark. Newark has several storm sewers, specifically Blanchard Street, Lockwood Street, Roanoke Avenue, Brown Street and the Meadowbrook Storm Sewer, which contain large amounts of industrial waste. These sewers which generally speaking discharge into the lower reaches of the Passaic River are the largest individual cause of pollution in that area of the Passaic River, and together with the backwash of Newark Bay water are the chief cause of this low water quality in the lower Passaic.

The Commissioners have ordered the city of Newark to halt these pollutions, but we have been informed by the city of Newark that it is an extremely complex matter to trace back each and every industrial connection that has been made into these sewers through the years. Over the past five years the city has stated that they have corrected many of them, but the evidence of a considerable quantity of pollution still going into the river is obvious to anyone looking at these discharges. The Passaic Valley Sewerage Commissioners have gone to court, and the court has given the city of Newark, I believe, one year to clean up. The city claims they are working on the matter and will submit progress reports to the Commissioners.

Edelbock House Boat, Kearny, New Jersey. This is a houseboat docked near the Riverside Park in Kearny. The Edelbocks live on this houseboat and their toilet and household waste are connected to a pipe which goes directly under the boat into the river. Admittedly, the waste is not a large one in volume, but during the summer, there is a definite odor in this area and no one can deny that this is a pollution. The Commissioners have attempted to have the Town of Kearny use their Department of Health to have the boat removed. This, the town stated, they were unable to do. In fact, the town co-operated with the residents of the boat by putting a gate in the fence just opposite the boat, and allowing water lines to run through the park to the boat. When the Commissioners asked why this was done, we were told by the town that they were afraid they might be liable to a tort action, if they didn't have a gate in the fence, because the Edelbocks would just climb over the fence and they might hurt themselves.

MR. STEIN: What kind of a "tort action" is that?

MR. LUBETKIN: If they hurt themselves, they might..

MR. STEIN: The "tort" has a "e" in it, and I thought that might be subject to a different interpretation.

MR. LUBETKIN: You are actually right there. This was actually dictated on a dictating machine and I didn't catch that. *

The Commissioners have gone to court on this case. There is a little ridiculing of the big Commissioners on this against two individuals, but I would like to ask the State Department of Health or the Federal Water Pollution Control Administration what they should expect to be done in this matter. Incidentally, the installation of a "septic tank" would not eliminate the pollution, as you know. The Commissioners are awaiting the outcome of a court case.

Guard Coating and Chemical Company, Kearny. This company was discharging industrial and sanitary waste into Franks Creek, a tributary of the Passaic River. Upon being ordered to cease and desist, the company intended to connect to a Kearny sewer which was quite some distance; however, they heard that a new sewer from Kearny would be built past their property and they requested permission to delay their connection until this sewer was constructed. The Commissioners checked with Kearny and Kearny confirmed that this sewer would be built in the beginning of 1969. As a follow-up I can say that this sewer was built, the Guard Coating Chemical Company

* Referring to his original paper.

did connect into the sewer, and the pollution was eliminated, although I will admit that it was delayed approximately six months over what it would have been if Guard was forced to connect to the more distant sewer.

A pollution of Franks Creek was also traced to an overflow of the Town of Kearny sewer. This was due to the inadequate size of the sewer at the foot of John Hay Avenue, and the Town of Kearny informed the Commissioners that they intend to build the new sewer to take the larger flow. This is the same sewer, incidentally, that went past Guard Coating and Chemical Company. As a follow-up, this sewer, as I said, was built in 1969 and this pollution from Kearny ceased.

West Diner, Little Falls, New Jersey. This diner built a sewage treatment plant in 1960 to take care of its wastes at considerable expense, but,unfortunately, the plant did not appear to operate properly. During the years of 1961 and 1962, changes were made which improved the effluent. However, there were intermittent pollutions during 1963, and the Commissioners again informed West Diner that the plant was polluting and something had to be done to halt the pollution. Other modifications were made to the diner. Experts were hired, and it appeared that things went fairly decently until 1965. It was then that the treatment was marginal again and, finally, in 1967 the Commissioners were again forced to notify West

Diner that the plant was polluting and they must do something to halt pollution at once.

Further modifications were made, such as larger compressors to handle the flow during 1968 and other consulting engineers were hired. It was the final conclusion to abandon the treatment plant to see if the sewer line could be built to connect to the city of Clifton's system. Permission was received from the city of Clifton and permission received from the Township of Little Falls to cross streets, and the State Highway Department had to give permission to cross the highway, and the easements for this sewer had to be gotten from private parties. The whole cost was to be borne by West Diner.

There was numerous correspondence between the Commissioners and West Diner concerning progress of this method of alleviating the pollution. As of this moment in 1969, agreements have been signed with Little Falls and with Clifton; approval of the State Department of Health is being sought, together with the rights-of-way from the Highway Department. This situation, of course, again caused problems for the Commissioners in determining whether they should go to court and force West Diner to spend large amounts of additional money in attempting to enlarge a type of treatment that is not conducive to their wastes, or to allow this marginal pollution to exist until the municipalities can get together with the agreement for the sewer line.

We had no way of pressuring the municipalities in order to speed things up. Our only pressure could be against West Diner. We have received complete cooperation from the City of Clifton, but we have had problems with Little Falls in getting the proper agreements passed on. At least this is what we have been told by Mr. Donato, the attorney for West Diner. But, under the circumstances, the Commissioners have felt that it would be unfair to penalize West Diner because of problems involving others, and that the sewer as envisioned would be the best answer to this pollution problem.

I have given this summary of the pollutions that the Commissioners have found during 1968. I have made no mention of the myriad of samples taken by the Commissioners' inspectors that were found to be nonpolluting and I am submitting to the Federal Water Pollution Control Administration a report on those mentioned above in greater detail. Other pollutions found by the Commissioners during 1969 will be just mentioned briefly.

Celanese Chemical Corporation. This was a pollution where a ditch went along the edge of their property. There was bay water going back and forth in the ditch, and analysis of this water indicated that there was 5 BOD.

Well, the company could find no discharge from their plant into the water. Finally, the plant filled in the ditch completely, eliminating this, and the pollution, as indicated, was halted.

Atlantic Chemical Company. We are still having a little problem with their housekeeping. The Commissioners are again after them.

Charter Bulk Company in Newark. This is a case of where they wash tanks and the overflow of this wash-water leaks into the Passaic River. After being notified to cease and desist, they have hired consultants, and I understand that they will control this problem.

Globe Products Company in Clifton. This is a food manufacturing plant. They have constructed a holding tank which was inadequate. They are now studying the problem to see if they can eliminate the food-droppings at the site.

Inmont Corporation at Hawthorne. This, as I told you, was a dye situation. They have put in scrubbers. They are constructing the additional facilities that we had asked, but they have not been completed at this time.

Kramer Chemical Company, Kearny. This is an area where they wash tanks. The overflow of the wash reaches the Passaic River through a hole in the bulkhead. They have written to the Commissioners that this pollution will be eliminated by

December 1, because they are moving that facility away. If it isn't, the Commissioners will go to court on this.

Pfister Chemical Company in Newark have an extremely complex situation, whereby they have to re-pipe a complete area into the Newark sewer to eliminate overflows into Plum Creek. They expect it to be completed by January 1970.

Revere Smelting and Refining Company. This is a situation where they break up batteries. The acid residue is running into Plum Creek, a tributary to the Passaic River. This was detected a number of years ago. They put lime over the area to neutralize it. This, of course, was not sufficient, but they are constructing facilities now. They have ordered stainless steel tanks and they will retain the wastes and neutralize it properly before discharging.

Mona Industries. This has been eliminated this week. They had a situation where there were leaks from the sanitary sewer going into the storm sewer. They dug up areas, re-piped and completed it.

I submit to the Commissioners each month a report on pollutions which have been detected the previous month and the status thereof. These reports are available for the inspection of anybody such as the State Department of Health or the Federal Water Pollution Control Administration at their leisure. I maintain in my office many, many files of industries, municipalities and storm sewers, giving their histories, any pollutions that we've had, and what has been done to eliminate the pollutions. 9#

The Federal Water Pollution Control Administration asked me to give them a report on fifty outlets in the river. Unfortunately, the location of these outlets was to the nearest 1/10th of a mile, and that guessed at, measured from a buoy at Newark Bay. It was extremely difficult for us to get correlation with our records, which are maintained by Streets and Company. In view of the fact that our records showed not just 50 outlets in this area but over 400 outlets, I am submitting herewith, and I have given to the recorder and Mr. Klashman and Mr. Sullivan, a book of 167 pages indicating outlets in the Passaic River, over 400 in number, to the Federal Water Pollution Control Administration. That is the book you have in front of you, Mr. Klashman.

Could you give it to Mr. Stein?

MR. STEIN: How many copies do you have of this?

MR. LUBETKIN: I brought three with me, but more are available in my office.

MR. STEIN: Can we have two more?

This will appear as an exhibit, without objection.

(Book containing 167 pages indicating outlets in the Passaic River was received as Exhibit No. 3 and will be found in the files of the Federal Water Pollution Control Administration, Washington, D. C., and the Northeast Regional Office, Boston, Massachusetts.)

MR. LUBETKIN: I have also given a copy of this book to the State Department of Health, so that anything they want to check, they are welcome to.

These are some of the outlets that the Commissioners continually monitor. Now, you must recognize that with the 700-and-some-odd industries and with the outlets mentioned here in the Passaic River, and other more numerous outlets in tributaries such as Second River, Third River, Saddle Brook, Hohokus Brook, Plum Creek, Hendersons Brook, Molly Ann's Brook, Schroeders Brook, and many, many more, monitoring is a fulltime job, and it is very possible and does happen quite often that we feel pollution in one spot has been eliminated, and ten minutes after we leave that area, something happens. Whereupon, someone else could come by and say, "Holy Mackerel, look at this pollution! Why does Passaic Valley allow it?"

An example could be the accident that happened last Friday. A truck carrying 6,000 gallons of #6 fuel oil overturned on McCarter Highway near Clay Street. This oil was washed by the Newark Fire Department into the Passaic River, despite requests made by us, that it be contained and picked up. This oil, after entering the river, if seen by others, would appear that there was tremendous pollution of oil, and what's the matter with Passaic Valley that they couldn't contain such a pollution and have it removed. Why don't we take people to court? The truth of the matter is that the Commissioners believe that court is an extreme last resort and that, generally speaking, industry will cooperate if you give them half a chance. We measure our success not by how many court cases, but how many pollutions we have detected and corrected.

Recently, a number of orders were issued by the State Department of Health. I would like to go over some of these orders to show what has been done by the Commissioners along these lines.

1. An order sent to the Public Service Electric and Gas Company for pollution from their gas manufacturing plant in Harrison. This company has two large 5-foot inlets wherein they take in Passaic River water, and a 50 by 65" outlet where this water is returned to the river after being used for cooling purposes. Since it is used in barometric condensers, occasionally a trace of oil may get into this water due to a seal being broken. This is policed by the Commissioners

and we have generally found that this firm does not pollute, although the intake of the water in this area is of relatively low quality because of its proximity to the Newark sewers that are polluting. Therefore, if one measures the output it might appear as though there was polluting matter there. But when you measure the input against the output, you will find that the Public Service does not pollute, except for the occasional breakdown in their barometric condenser.

Interstate Soap Company, Blanchard Street, Newark. This company has a 4" intake to its plant and a 4" diameter discharge of the river water. The river water is used solely for cooling purposes and the Commissioners could find no violation from this plant.

Kramer Chemical Company, Kearny, New Jersey. I mentioned this before. This plant washes tank trucks and barrels in their yard and the polluting wash water goes over ground through a hole in the bulkhead and discharges into the Passaic River. There are orders from the Passaic Valley Sewerage Commissioners to cease pollution. I have a letter from them stating this operation will be completely terminated by December 1, 1969. The Commissioners are awaiting that date. If the operation is not halted, the Commissioners will commence court action.

Alcan Aluminum Corporation, Kearny, New Jersey.

This company has five outlets to the Passaic River. Four of them contain cooling water on machines to cool aluminum strips. The water is clear and nonpolluting. The fifth one was an emergency overflow, if their industrial waste pump failed. The float that controls this pump did stick, causing pollution, and when this was pointed out to them the control was repaired on September 22. The Commissioners requested that they seal the overflow outlet so if the control failed again, they would know about it immediately, as the overflow would be on the plant floor and would not go undetected for a period of time. This overflow pipe was sealed on October 5th, this without court action.

City of Newark -- storm sewers. I had covered this matter previously. The Commissioners have them in court.

Essex Chemical Company, Newark. This company has six pipes from its property to the river. Three are 12" intake pipes, wherein river water is brought into the company. Three are discharge pipes to the Passaic River. The discharge pipes contain yard drains and two cooling water pipes. Unfortunately, some SO_2 (sulfur dioxide) from a wash filter was connected into one of the cooling water lines, and occasionally when the filter was washed a small amount of sulfuric acid or SO_2 could be detected in the water which was polluting. When they were notified that there was polluting material in their discharge, they monitored the plant, found the connection, and on or about September 15th this pipe was reconnected so that the discharge goes back to the city sanitary sewer.

At the same time, bauxite wash water also was occasionally discharged to the river. This is an inert material which gives no BOD or COD, but is turbid. This was also reconnected to the city sewer as of September 15, 1969. However, they are also in a situation where they are just south of the Roanoke Avenue Storm Sewer, which is highly polluting and, therefore, the intake to their company is of relative low quality; and if you analyze the discharge it would appear to be polluting, but when compared to the intake, an analysis shows that no additional pollution is coming from the plant at present.

I explained about the Revere Smelting and Refining Company. This is an intermittent pollution that has gone back a few years with the Commissioners. When first informed of this pollution in 1966, which consists of the discharge of battery acid accumulated from the breaking up of the batteries during their processing, this company installed beds of lime to neutralize the acid, and did have the pollution under control. However, unfortunately, as these beds were consumed they were not replaced, and they were again polluting. This time the Commissioners asked for a more reliable method of pH control, and this company has ordered stainless steel tanks so that the discharge could be caught therein and neutralized before being discharged, and as the new city sewers are brought into operation, the discharge will go into the city sewers neutralized, rather than into the stream. However, while waiting for the tank, this company is again neutralizing the waste with lime.

Celanese Corporation, Newark. I explained there was a discharge into a ditch from the overflow of a formaldehyde processing plant. This has been dammed up and is now being pumped to the sewer. The ditch has been completely filled and there is no outlet to the river from this plant, except -- I have here a three-inch steam condensate line, but I understand it belongs to the firm next door.

Curtiss-Wright Corporation, Wood-Ridge, New Jersey. I have previously reported on this company.

Carmer Industries. Quite frankly, the Commissioners have not been able to locate such a firm. If the State has any information, we will be glad to cooperate with them.

Union Carbide Company, Linden Division. In June 1959, the Commissioners discovered a discharge from this company into Plum Creek, a tributary of the Passaic River. Upon being informed that this was polluting the company made arrangements to have this waste pumped to the property of Chemline Corporation, where it was loaded onto a tank truck for removal.

This violation was eliminated on June 13, 1969.

Vulcan Materials Company. This company is not within the jurisdiction of the Commissioners, but discharges directly into Newark Bay.

Benjamin Moore and Company. This company has three outlets to the Passaic River. A 12" old outlet, a 6" and 10" outlet to take care of storm drainage and flood control. Earlier this year the Passaic Valley Sewerage Commissioners discovered a small discharge of polluting material from the 12" line which was supposed to have been abandoned. Upon investigation, it was found that the valve leaked. This was subsequently sealed so that no discharge from this area went to the river. The polluting material goes to the city sewers.

Thus you can see the Commissioners are aware of and follow up any reports of pollution until they are either eliminated or taken to court. I have brought with me several files on firms who we were informed were invited to this conference. Although when we had asked some of them if they were contacted by the Government concerning pollution, we were generally informed in the negative, but if this hearing desires any information on any of them I shall be glad to open any file I have and give you details. If I do not have a file here, as I previously stated, I have additional files in my office which are available for perusal.

This Commission desires to cooperate with any other pollution enforcement agencies and would like cooperation from them, in that if they discover a pollution, which the Commissioners are not aware of, that we be informed and given the data, so that we may independently move against the violators.

There are other problems with the Passaic River, namely, the Commissioners' trunk sewer in the Paterson area. Unfortunately, through the years additional flows from this area have brought us to the point where the Commissioners' sewers reach capacities during peak hours. We are, therefore, finding that at the slightest rain, or if there should be an extremelv large individual dump, that there are overflows into the stream which we feel should be halted. We could notify the lessees to make plans to build their own treatment plant so that what capacity is in the sewer could be reserved for the owners, but we feel this is not to the best interest of the State and for pollution control, since past experience has indicated that small treatment plants will intermittently pollute and are relatively expensive.

The Commissioners are not ignoring the situation, and I am recommending to the Commissioners that studies be immediately undertaken for the construction of a parallel sewer from the Paterson area down to the Yantacaw section of Clifton, that is, the Clifton-Nutley borderline. The

Commissioners intend to authorize their consulting engineer to proceed immediately with the analysis and a route study and cost estimate. Then, in the overall plan, the Commissioners are considering seriously constructing a high quality treatment plant at the Yantacaw section of Clifton. This will be of a high enough degree of treatment so that a discharge of approximately 100 million gallons a day will be made into the Passaic River at that point of relatively pure water. This will have the effect of helping the flow of the river from that point south and will have the further effect of increasing the capacity of the Commissioners' sewer from that point south to the Commissioners' present treatment plant. This is already under study by the Commissioners' consulting engineer and was authorized at the same time the engineer was authorized to study secondary treatment methods for the Passaic Valley Sewerage Commissioners' Newark Bay plant.

A secondary effect of this plant would be to reduce the amount of overflow periods in the southern section in Newark because of the increased unused capacity of that area. As a progress report, you know that the Commissioners are proceeding with the studies for the secondary treatment process, and I will repeat the time schedule which I had stated in the Third Hudson River Enforcement Conference, namely, the Commissioners expect studies to be completed in 1971; plans and specifications completed in 1973: and the plant wholly in operation in 1976, provided the funds are made available.

I wish to report that yesterday the legislation which will enable the Commissioners to bond this was passed. It will go to the Governor for his signature.

During the studies, however, and during this work at Newark Bay, the Commissioners will give a high priority to the upper section sewer, and will naturally apply for Federal and State funds for this, because this will allow the Commissioners to remove immediately polluting material that is entering the river at those points. We therefore hope we will get favorable consideration from both the State and Federal Government, and that they will not delay us until the work at the Newark Bay Treatment Plant is completed, but will recognize this for what it is, as a necessary step to completely control the Passaic River, and that one thing should not be predicated on the other.

Also, next year, plans and specifications for our new grit chamber and screens will be ready, and again the Commissioners will wish to proceed to improve its primary treatment, and we hope that the Federal Government will not see fit to delay any financial applications pending receipt of other reports.

Finally, we again wish the Federal Government would reconsider its position on sludge digestion, as we honestly feel that this will serve no interest, or at least give the Commissioners a report on why they believe sludge digestion is necessary and what they hope to accomplish by it.

If there are any other questions concerning any individual pollutions of the river or any of the programs the Commissioners have in mind, I would be glad to answer them.

I just want to add one more addendum, and that is when Mr. Bromberg was talking up here about primary treatment plants, he talked about BOD removals, and so forth, and he said, compared to a normal domestic plant which removes 20 percent, Passaic Valley is only removing 13 percent, and, therefore, implying again poor operation.

I think Mr. Bromberg could have qualified his statement by saying that the waste from Passaic Valley is not normal domestic treated waste, and that the majority of BOD is in solution, and no primary treatment plant in existence could possibly remove a large quantity of BOD in solution.

Thank you.

MR. STEIN: Thank you, Mr. Lubetkin.

Mr. Lubetkin, before I open this up for discussion, I think you have really performed a service here, and your statement speaks for itself; but I can see where the problem lies. This is a real one. I hope you listen to me on this because I know this was put forth with complete candor and sincerity on your part, or on the Commissioners' part. I am not arguing that.

But the question here of outlining a series of 40 or 50 operations which every city faces -- a little city in Kansas even did that -- this is not what we are talking about. This is possibly the problem. This is the reason that I want to talk to you.

I don't think anyone ever questioned the fact that in dealing with its people and its industries the Passaic Valley had a system of maintenance. However, what we have here is a river. I went up that river in a boat about a month ago. And all this talk about what we are doing here does not change the fact that obviously that is a dead river and ranks with rivers like the Cuyahoga, the Buffalo and the Houston Ship Canal, and it is a disgrace to the United States.

It does not alter the fact that you are putting out a population equivalent, as indicated by the New Jersey representative, of about 3,000,000 people.

The point is, sure, this all has to be done. This is the problem we expect you to do on a day-to-day basis.

We are talking here about improving the quality of the Passaic River as it comes out and improving the plant.

These cleanups of "pollutions," as you put it, getting them out of a local condition in the Passaic River and sending them to an overloaded plant, whether it is industrial or otherwise, and then not fully treating them and shooting them on to New York, is precisely why we are here.

No one doubts you are running an effective internal program, but this is not our issue.

I put this forward in good faith: The issue is we may be on different wave lengths and on other sides of the moon, but I hope we can get together. We know you are doing this; we expect that you are doing this: we commend you for doing this; but this is not the reason we are here talking to you, be it a defect in this kind of a program or your effectiveness in this program.

MR. LUBETKIN: Well, Mr. Stein, I appreciate your statement.

The only thing is, although you know why you are here, the statements made previously by your representative did not indicate that. His statement appears -- and I am glad you are correcting this -- to say that we are not properly policing that river, and therefore you have to go in and do it.

Now, I tried to point out that the Commissioners do have a day-by-day -- I know I have given you a lot of facts and statistics, because I don't want to say, "Oh, we do a lot," and that was the purpose there.

I did point out the magnitude, and I thought I pointed out that I have been estimating 90 percent of the degradation of that part of the river where it is degraded is due to the city of Newark's storm sewers. When that one item is cleaned up, that river will go back in a relatively short time. All the other items together do not contribute as much as that one item.

I pointed out that in the upper reaches, the water actually improves in our area.

I did point out that you will find an intermittent pollution.

I question this figure of a daily deposit of three million. I have not had time to go over the calculations, but I do question it.

MR. STEIN: All right.

MR. LUBETKIN: Now, I agree with you, this should not have been the topic, but, unfortunately, this is the trend that was taken.

When you leave here, you have no control of what will be said in the press. The only thing would have been that Passaic Valley was chastised because they didn't control the river, and I am pointing out we are controlling, within our power. The one point which we have not been able to control is in the courts, and that is the city of Newark's storm sewers. The others are relatively minor and intermittent.

I pointed out the points that we have controlled not to list a whole bunch of facts and figures, but I didn't want to say we did so many and have someone say, "Ah, he's kidding." This is why I went over each and every one, and each and every one could be documented.

They claimed -- and I say "they," not only the Federal, but the State -- that we haven't taken many people to court. By gosh, we find most people are cooperative when you let them know. You don't have to take them to court. You do have to go after some, and those we will, but the measure of success by the numbers we take to court to me is a whole false assumption.

Now, I quite agree with you that the real purpose of this was to find out what the Commissioners are going to do about their own treatment, and I did summarize this, Mr. Stein, in the latter part of my report.

MR. STEIN: I understand, but let's see if we can come to an agreement on this, and then I am going to throw it open to questioning.

I think I am speaking for all the conferees here. We recognize the problem of Passaic Valley is not going to be controlled by any amount of policing, however assiduous. The problem is so great in there that there is going to have to be, in the opinion of the conferees, as we have stated in the past, major construction improvements to do this.

I want to make this clear: We are not here -- I hope we are not -- to review or supervise your day-to-day policing, because even if that were the best, and I am not arguing it one way or the other, or quibbling about this, this does not answer the question of why we are here.

The reason why we are here is, there is a judgment that no matter what you do with the present system and no matter how you police it, unless you put in extensive new facilities, we are not going to get the water quality that we are looking for.

Is that a fair statement?

MR. LUBETKIN: This we are in concurrence with.

MR. STEIN: All right. So I would hope, unless any of the conferees are interested in it, that we could narrow the issue on this. I don't know that that appears even within our jurisdiction, and I don't know that it would further the purposes of this to get into the details, or the specific policing action you have with the people in your community.

MR. LUBETKIN: Mr. Stein, I agree with you, but I had to say that because you are in a position of punching a guy, and then put your glasses on and say, "Wait a minute. That's not what we are here for," and I wanted to clear the air on certain things.

We want to cooperate, if you will give us half the chance on any particular matter, on any of these companies that you have stated. We probably have a file on them and we will make it open to you.

MR. STEIN: All right.

MR. KLASHMAN: Mr. Lubetkin, we thank you very much for your kind offer, and I want to congratulate you on your report on these 65 cases that I counted up.

Now, as I understand it, you have indicated that on Page 37 of your report, and, as you just said again, your files are open to us, so tomorrow morning at 10 o'clock we will have two men at your office. Is that all right?

MR. LUBETKIN: Surely.

MR. KLASHMAN: They probably will be there --

MR. LUBETKIN: Can I have their names, so that 15 others aren't there?

MR. KLASHMAN: Well, initially there will be two men. Mr. Cinncia and Mr. Librizzi will be in your office at 10 o'clock tomorrow morning, if that is all right, and they or their successors will continue until we can get the information we need. All right?

MR. LUBETKIN: Surely.

MR. KLASHMAN: Okay.

MR. LUBETKIN: The Commissioners, incidentally, have never denied access.

MR. KLASHMAN: Yes.

MR. LUBETKIN: I don't want that to be implied.

MR. KLASHMAN: I am not implying anything. They will be there at ten o'clock and we will continue working until we can get this.

Mr. Stein, I have some other questions.

MR. LUBETKIN: I suggest, Mr. Sullivan, that possibly a representative of the State might want the same information.

MR. SULLIVAN: We appreciate the invitation. I don't know whether we can swing that 10 o'clock tomorrow morning or not.

(Laughter.)

MR. STEIN: Are there any other questions?

MR. SULLIVAN: Yes.

MR. STEIN: Go ahead.

MR. SULLIVAN: Commenting further on the dialogue between Messrs. Stein and Lubetkin, one of the tentative conclusions in the report of the Federal Government is that the enforcement responsibilities of the Passaic Valley Sewerage

Commissioners to maintain the quality of the Passaic River as prescribed by the enabling legislation is not being carried out, so I do think a discussion -- I mean, if we are going to come up with this conclusion, it certainly should follow a discussion of whether or not this is in fact the case.

I don't think it is an essential question before us. I think a much more important one is whether or not, and if so, how soon the treatment plant will be upgraded to meet the State's requirements.

There are two separate considerations. The report deals with them as separate considerations, and the conference invitation indicated we are interested in these two things.

Do I correctly interpret the gist of your testimony in outlining these cases that it is your opinion that pollution control on the Lower Passaic now is well in hand?

MR. LUBETKIN: The reason I made all these statements is that it is my opinion that pollution control in the lower part of the river is as much in hand as the courts will allow it to be.

The one extremely large violator is known to us. It is in the courts, and we cannot act any further on this. You have also served notice on them. I presume you will take them to court separately, and I have made a statement that when those particular violations are controlled, the river will show a radical improvement.

MR. SULLIVAN: Well, apart from the contribution made by the city of Newark, then it is your position that the control of pollution sources on the Lower Passaic is adequate at the present time?

MR. LUBETKIN: The control is. The results have not reached what it will. In other words, those that are violating we know, and they are being worked on. The control we believe is there.

MR. SULLIVAN: Do you find difficulty in getting industries or municipalities along the route who want to hook up all of their wastes into your system to do so?

MR. LUBETKIN: When you say industries and municipalities along the route, I would have to define a few things before I could answer the question.

By statute, there are municipalities in the District and outside the District, and, unfortunately, by statute the District goes through parts of municipalities. For example, on the eastern side of the river, you have Lyndhurst and North Arlington where we just take the sewage of half a municipality. The other half is treated.

Now, this may sound silly, but when the original legislation was made, they were thinking of a Passaic River Basin and they didn't take political boundaries but geographical boundaries. We hope, and I am now speaking unofficially because this has not passed the Commissioners -- we hope that if we are able to construct this plant that I am talking about, that this will give sufficient capacity to the remaining sewer below so that possibly we can unify things and help the whole pollution situation.

MR. STEIN: May I interject on this?

I would like to make an offer. Maybe I am mistaken on this, but you have talked about this and maybe you have that under control and maybe not.

I went up that river and I saw material on that river. I agree with Mr. Sullivan. We have two situations: One is what is coming out of the plant and the second is what is coming out of the river.

I think we would be prepared to take any invitees and the press up that river next week, weather permitting. I would not like to do that without a representative of your agency being there.

Now, if you and I went up and looked at the river and I had certain observations, but you believed that the situation is being controlled and all you have to do is control that Newark storm sewer and that riveris going to be in good shape, without drawing a judgment here, how about your making arrangements for a trip with our Metuchen staff? We will take the people up the river and you be there and make the explanation, so that we can get this on the line. How about it?

MR. LUBETKIN: I'd be glad to.

MR. STEIN: All right.

MR. SULLIVAN: I have only one final question --

MR. LUBETKIN: Incidentally, may I just interrupt you one second?

I want to go back to the business of floating material and debris. Again, we just don't seem to have control over this, so if you see a log or a branch floating, I don't want you to say, "Oh, look, you couldn't control this."

MR. STEIN: Oh, no, no.

MR. LUBETKIN: This you understand.

MR. STEIN: The question I have, Mr. Lubetkin, and let me tell you this --

MR. LUBETKIN: All right.

MR. STEIN: I have been on many, many polluted rivers over the last 25 years. Just the appearance of the river with all that sludge bubbling up, and the oil covering and the general fetid condition of the river, just visually in looking at it as a man who has looked at polluted rivers, I have rarely seen one that looked worse.

MR. LUBETKIN: Fine. I think it would be a good idea to make the trip.

MR. STEIN: That's right.

MR. LUBETKIN: I am just hoping that the oil that was spilled, that 5,000 gallons, isn't still there.

MR. STEIN: No.

MR. LUBETKIN: Let's make the trip and we will be able to show you and explain any outlets, or anything that we have.

MR. STEIN: Please. I want as a condition of the trip that you will be there and talk about it.

MR. LUBETKIN: I will be there.

MR. STEIN: All right. Go ahead.

MR. SULLIVAN: The Chairman has just made a judgment about the river that he wanted us to hold in suspension.

(Laughter.)

MR. STEIN: No. I wish the river held that in suspension. I made a visual observation.

I don't make a judgment. That is why we are here, to hear what you people say. I am saying on appearance what this river looked like.

MR. LUBETKIN: Well, I think we could divide the river in sections when we talk about it, Murray.

MR. STEIN: That's right.

MR. LUBETKIN: Because I agree with you on the lower reaches, where the Newark sewers discharge. I disagree with you in that area above Dundee Dam.

MR. STEIN: I wasn't up there. I want to say that.

MR. LUBETKIN: That is a very nice section of the river.

MR. STEIN: I wasn't up there.

MR. LUBETKIN: Let's go there and we will discuss it.

MR. STEIN: All right.

MR. LUBETKIN: And I think members of the press can be invited.

MR. STEIN: Right.

Mr. Sullivan, do you have another question?

MR. SULLIVAN: On Page 39, Mr. Lubetkin, I think we get to the heart of the matter so far as the other part of this question is concerned, and that is the plans to upgrade the treatment facilities.

In here, you set forth a time schedule for the completion of plans and specifications, and finally for the plant or plants coming into operation by 1976, with a proviso that the funds be made available.

Now, I would like to ask you first, be made available from whom?

MR. LUBETKIN: Well, we are going to get funds from three places, we hope: No. 1, our own bonds; No. 2, from the State; and No. 3, from the Federal Government.

Now, I said, "I hope."

MR. SULLIVAN: I think "hope" is a good word. I wonder --

MR. LUBETKIN: We are not talking about peanuts here. You have heard $100 million and $150 million. I am telling you this is closer to $200 million.

Now, suppose we make application for this and there are delays, and we are told, "Well, this has to proceed here." We are going to naturally delay if we are talking $20, $30, $40 million on any one particular thing. If we are told to proceed and we will be reimbursed, then we have to have bond hearings and public hearings.

Well, what if the city of Newark decides that, now, wait a minute, they don't want to proceed on an "if" basis? This is out of our hands. This is what I am trying to get at.

MR. SULLIVAN: I would like to refine it a little further.

Are you saying that if the Federal Government will offer to fund 33 percent of this project and the State will offer to fund 25 percent, that you will proceed on the schedule in this testimony; but that if they do not, then you will not?

MR. LUBETKIN: I thought the Federal Government might fund 55 percent.

MR. SULLIVAN: Then let me refine my question. Does the proviso mean that unless 80 percent of the funds are picked up, 55 and 25 -- that is, 80 percent of the funds coming from other sources -- this project will not proceed?

MR. LUBETKIN: No, I wouldn't say that, because I am in no position to say that. This will be an administrative decision, not an engineering decision.

MR. SULLIVAN: I am still trying to pin down whether or not --

MR. LUBETKIN: I do know this: That if funds are not available from the State and the Federal Government, it will delay this, because the administrative decision will have to determine where the funds are to come from.

MR. SULLIVAN: If there are no funds?

MR. LUBETKIN: That's right.

MR. SULLIVAN: But what level of out-of-town funding do you expect to proceed with construction?

MR. LUBETKIN: I am in no position to answer that. Only the Commissioners can, and it is the Commissioners at that time, not a Commissioner of today who can say it.

MR. SULLIVAN: It seems to me that that is the heart of the whole issue, that we can't say that we have in fact had proposed to us a schedule for construction with that question unanswered.

MR. LUBETKIN: I can only say that the Commissioners have passed a resolution that they will abide by the requirements of the Hudson River Enforcement Conference.

Actually, this business of funding does not come from the Commissioners. That was my own statement. I really had no authority to say it, but from practical experience, I know what happens.

MR. STEIN: May I go back? I had the same note as Mr. Sullivan's.

On Page 2, you interpose here, and I clue that to exactly the question that Mr. Sullivan asked. because this is the key question, and you said you are legally entitled -- and that was the phrase you used -- to 70 percent. What do you mean "legally entitled"?

MR. LUBETKIN: The word should have been "eligible." Wouldn't we be eligible for this?

MR. STEIN: You may be eligible.

Now, the question here, the way I understand it -- this is a game you can play with the authorization and the money.

MR. LUBETKIN: That's right.

MR. STEIN: Now, the question is, under the best possible circumstances, by putting it all together you may even hike it up another five percent with Mr. Sullivan here, but considering the demands made by communities in New Jersey, and considering even a billion dollar appropriation, I don't know what that comes out to for New Jersey.

MR. SULLIVAN: $32 million.

MR. STEIN: $32 million; and considering the kind of project you have -- let me give you my experience, whether it is New York, and I will name the big cities, whether it is Cleveland, whether it is Detroit, whether it is Passaic Valley, the way I do the national arithmetic -- and if I am wrong on this, please correct me -- the chances of any of the major cities getting 70 percent aid while you are eligible does not seem to me a very good possibility.

MR. LUBETKIN: All right.

MR. STEIN: Now, just let me finish one point. If you condition your schedule on financial aid being available, saying that you are legally eligible and entitled to 70 percent, we are in trouble.

MR. LUBETKIN: Let me say a little more on that.

You are a practical man, and so are we. If the Federal Government and the State -- although the State wouldn't because they have this bond issue earmarked for this -- were to say, "There is no money, and that's it, but you must proceed," then the Commissioners would proceed.

But the "iffy" situation that has seemed to always develop causes tremendous delays, and let me show you why. When we hear a statement, "Well, if this happens, you may be able to have this," then the Commissioners, who, after all, are political appointees and are trying to do everything for the benefit of their taxpayers, are reluctant to proceed, and pay for something where somebody will say that, "If you had delayed a month, you would have gotten twice as much."

Now, we have had this problem with the Gouverneur Street repair business. We were told first there is no Federal aid in that, that is a repair, and we proceeded to move along this line. We were then told, "You're silly. There is Federal aid."

Now, you know what I am talking about, gentlemen. This has hit the newspapers, and everything else.

Well, now, the Commissioners had to back up. If there is Federal aid available, they are not doing what is right for the people in this area if they don't get it. We have changed our specifications at an additional cost of $20,000 to meet the requirements of Federal aid, if available.

If you now tell us it is not available to us, we have expended an additional $20,000. If you had told us a long time ago it wasn't available -- but even at this juncture we seem to get letters that if we go along with certain requirements this may be available -- well, gentlemen, this makes us go back and forth, and, gentlemen, this slows things.

Now, I have no control over it. You may have no control over it, but this will affect the time schedule.

MR. SULLIVAN: I have a question on that subject.

One of the prime selling points in this recent bond issue which was approved so overwhelmingly was precisely that -- that it would help to remove from the process this kind of uncertainty that you describe; that by the State appropriating 25 percent, you are first assured that at least this amount is available until it, in turn, also runs out, which is certainly a few years off; but that, secondly, under the terms of the Federal statute, this would qualify construction for the maximum amount of Federal aid to come now or subsequently.

In my opinion, there isn't enough money in Fort Knox to provide 55 percent aid for all the sewerage construction throughout the Nation, but at least with the qualification of 25 percent aid and eligibility for Federal construction aid, there is no advantage to be gained in delaying and hoping that next year will be a better one.

So, I wonder, given this set of facts, knowing that if you move with some expedition, 25 percent will be available and that you will get your name on the wall for Federal funding to the extent that it comes, can we accept the dates that are in this testimony as a binding schedule?

MR. LUBETKIN: Yes, in my opinion.

MR. STEIN: All right.

MR. SULLIVAN: Thank you.

MR. STEIN: I think we have narrowed the issue down.

May I just ask you one other point? You know, I hate to do this, but this was raised and we have a problem.

On Page 2 you say:

> "When statements are issued by a cabinet member, newspapers publish them as facts, regardless of what is contained therein."

What is your basis for that? Name me one newspaper that ever publishes what is said by a Cabinet member as a fact, regardless of what is contained therein? What newspaper are you talking about?

MR. LUBETKIN: I am referring to statements where the official blasts Passaic Valley for noncooperation. I question this noncooperation.

On September 7th, for example --

MR. STEIN: Let's get back to my question. I am not asking you that. I am asking you what newspaper published this as a fact of what a Cabinet officer said, regardless of what he said? What newspaper? What are you talking about, an American newspaper, or a Russian newspaper?

MR. LUBETKIN: I am talking about the statements made by the Secretary concerning this conference. He has reached the newspapers, statements were made; and I am not blaming the Secretary, as I said --

MR. STEIN: I am getting to that as my next question.

MR. LUBETKIN: The point is, they have reached the newspapers. The newspapers quote them. I question those statements, as to whether they are factual; I don't question that he said them.

The point is, and I think you know exactly what I am trying to get at, when the Federal Government says something, it carries a lot of weight, and I think therefore they have to be self-censored. Nobody else can, but they should weigh their statements before they are issued.

Now, this was a statement concerning the calling of this conference on how 40 industries were invited and the Passaic Valley was invited, and they are going to get tough with us.

I spoke to most of these 40 industries. They hadn't even received an invitation, but it was in the newspapers.

MR. STEIN: All right. What you are saying is, newspapers publish them as facts.

Now, I would like to know what any newspaper published as a fact that the Secretary said that he did not say, because I am getting to the next point.

If you juxtapose this with your next point -- that all any Cabinet officer has to do is say anything and regardless of what he says, the newspapers are going to publish it as a fact, you put this with your next point. On Page 3 you say, "This is strange, because we all know the Secretary is guided by his technical and career employees."

I have been around government for 25 years. Now, if you say, "We all know that a Cabinet officer is guided by his technical and career employees," I don't know what difference there is with a change of Administration -- and then you say whatever, "...regardless of what is contained therein," that these people put in, the newspapers in this country automatically publish it as facts, I think we are in a kind of never-never land that I don't see here.

The reason I bring this up, Mr. Lubetkin, is with this attitude, we are going to have a very, very difficult time in arriving at solutions, because I can't see anything more contrary to what goes on.

MR. LUBETKIN: Well, you are looking at it from one side and we see it from the receiving side.

I don't know. Have you fellows ever sent out a communication without sending it to the press first? I don't know.

MR. STEIN: No.

MR. LUBETKIN: All I know is, every time we seem to have correspondence from you, somebody has read it or called me from some newspaper saying this has just been released. I usually have said I haven't received it yet.

MR. STEIN: Now you are asking two other things.

Let me explain what happens here, because this is as frustrating to us as anybody else. Let me explain this because this is a cause of concern and irritation. However, it is not one of these things that is insurmountable.

The point is, when someone tells me, and we have a representative from that great paper here -- someone in Camden told me, "I read about the notice in the New York Times." Do you know what my answer was to him? "So did I."

The press release was made at a time before the mailing got out. I do not know that that is so terrible.

The next question I want to ask is of Dwight. I have been in Kansas, and I have never been able to find the Times, and I don't know where he found it. The point is, if the Secretary or anyone can make a press release, he is certainly entitled to make a press release.

I have tried to put the point across that the State and the people concerned should get the Notice before they read about it in the press. That does not always happen because we have a big organization. When that doesn't happen, please do not get the notion that there is a conspiracy. Please do not also get the notion that the press is not printing the facts.

MR. LUBETKIN: Oh, no. The press is printing the facts as stated. The press is not wrong. If I were the press, I would print what was given to me.

I think you are missing the point. I think the press is absolutely correct. This is news.

The point I am getting at is, the Secretary did not make this statement without advice from some people. You may say he makes statements without advice, but I doubt it. This information came from somewhere, and I think the statement that we are uncooperative and that these 40 industries are not doing what they are supposed to -- I just don't think this has any basis in fact -- not that the release is wrong.

The press covered it properly, but I am talking about the information within his statement, and I am talking about when the average person reads a statement like that and they look at the high office of someone making such a statement, and the average person automatically assumes it is the truth.

MR. STEIN: You know, Mr. Lubetkin, you are shifting your ground.

If you know what the average person thinks, fine, but you did not say that at first. You didn't say the average person thinks that. You said newspapers publish them as facts, regardless of what is contained therein.

The point is, I think we are on just as treacherous ground when we try to talk about what the average person thinks, as we are in talking about newspapers publishing as facts regardless of what is contained therein.

We all know any newspaper, or newspapers, as they should, will publish a statement of a public official, whether it is you, whether it is a Federal official or a State official. I think if you come here with this kind of an approach and begin arguing what is in the newspaper, we are going to have a difficult time proving a case.

We just had one --

MR. LUBETKIN: You --

MR. STEIN: May I just finish on this, because this is the point.

We just held hearings in Ohio the other week involving several steel companies. You may look at the record. As for one of the steel companies, the case that I think went least smoothly was handled when the man came up and never would argue what was in the report or what we were talking about, but only what was in the newspaper reports. I had no objection to the newspaper article. But if we are going to do that, we are not going to get on the job, it seems to me.

MR. LUBETKIN: I guess there is a complete misunderstanding in what I intended to say. Maybe my verbiage wasn't of the best.

My intention was no reflection on the newspapers. I think that they printed the statement, and they should. It is news.

What I was trying to imply was that when these statements are issued they carry the weight of the high official.

I did not mean to say, if you so interpreted it, that the newspapers were carrying them as facts. The newspapers quoted, and properly so, but they carried the words of a high official.

Now, you can say how could I know that he takes the advice, and I am not going to sit down and argue back and forth on legal grounds, because we are not in a court of law. But I do feel--and this is my personal opinion--that there was prejudice in the advice given to the Secretary concerning what was happening here.

For example, you had a report given by you people. This report was given to me as I came in. I understand it was given to the State last Friday.

This report could have been given to us in the formative stage if you so desired, but many, many statements were made out of this report. They were made this morning, and I presume, although I can't say it is so, that they were morning papers and they reported as facts what was said, and it is a fact that it was said.

The fact that I did not agree -- and, of course, you can rebut the statements I have made -- will come out this afternoon. But wouldn't it have been better all around, gentlemen -- and I am not stopping you from issuing facts -- prior to this report being published if you had come to my office, we would sit down and discuss it, and if you didn't like what I said you could publish them if you wanted. But I might be able to straighten out a lot of the errors.

This is the only thing I was driving at.

Now, if the actual verbiage did not point this out, I apologize.

MR. KLASHMAN: Mr. Lubetkin, I would like to make a couple of observations.

First, I believe that we discussed with you the fact that there was certain information we wanted and needed, and we thank you for your offer. We will have two men in your office tomorrow morning, and for as long thereafter as is necessary.

But, I did not understand that you had made this offer to us before; so if you say that you did, fine, but we will go on from there.

Second, I would like to clarify something that is in your report. You state that you called me and asked for the reason for the sludge digesting requirement.

MR. LUBETKIN: No, Mr. Klashman, I didn't call you. This was in Atlantic City. You were on the podium.

MR. KLASHMAN: Your statement is, "I had previously asked Mr. Klashman the reason for the sludge disposal digestion requirement prior to disposal in the ocean."

What I would like to say to you is, as I am sure you know, there are five points which were laid out by a former Commissioner for the Federal Water Pollution Control Administration on the disposal of sludge in the ocean.

Fundamentally, we are opposed to disposing of sludge in the ocean, but if there is no other alternative, #8 we have five points laid out, one of which is this question of digestion.

When you asked me what is in the mind of the Secretary putting this out --

MR. LUBETKIN: I'm sorry. I didn't ask that question. I asked why you required digestion.

MR. KLASHMAN: The point I am making to you is that the statement was issued by the Department. My recollection is that you asked me what was in the mind of the Secretary.

MR. LUBETKIN: No, that is not so.

MR. KLASHMAN: What I am trying to say to you is that I have no idea of what is in another person's mind when he issues something.

All I can tell you is that based on the technical information available to the Commissioner, he made the judgment that he would issue these five points on sludge disposal, and I can't give you the basis for his, you know, rationale.

MR. STEIN: Do you want to keep this open?

You know, I have a proposal to make. I suggest we get together and work this out. I think we have our work cut out for us.

Let me indicate what our work is. If I understand what you and Mr. Sullivan have said about the 1976 date, and I think we should keep to that -- that is the essential point --

MR. KLASHMAN: I think so too.

MR. STEIN: That is the essential point.

Let me give you this thought. We are not in executive session. I don't know what the reaction is on selling this back at the ranch either. But without getting into the fringe issues--and I think we have explored it and I brought up some too because I wanted to clear the air--we should zero in on the schedule, on what we can reasonably do, and see if we can get agreement on this schedule by all concerned.

Mr. Sullivan?

MR. SULLIVAN: One short question concerning the schedule: There is now in effect against the Passaic Valley Sewerage Commissioners a court order from the Chancery Division of our Superior Court, which directs that the construction be completed of new facilities in accordance with the State requirements by the fall of 1970.

Can you say what the Commissioners will do with respect to this binding requirement?

MR. LUBETKIN: Well, the requirement can be legally binding, but I have given you the fastest physical way of doing it.

How can you legally bind somebody to do something that physically can't be done any faster?

You say the fall of 1970. This is a tremendous program. You don't design this overnight.

It isn't lack of desire that sets this schedule; if there are no delays whatsoever, this is minimum.

MR. SULLIVAN: I am not arguing that point now, and we have made no representation whatever in behalf of our Department as to this proposed schedule.

I was simply wondering what your intention is in dealing with this court order.

MR. LUBETKIN: We intend to do this as rapidly as possible.

MR. SULLIVAN: But the fact that the schedule you have proposed would be in violation of this court order raises the question of what step you would take with regard to the order itself.

MR. LUBETKIN: I am not an attorney.

MR. STEIN: Are there any other questions?

By the way, gentlemen, I do think this is our biggest issue here, and I hope the resolution of that won't impede moving ahead as rapidly as possible.

MR. LUBETKIN: No, no. The Commissioners are moving. They have intended to move for some time. This hearing in no way speeds it up, nor does it slow down.

I have made a representation in New York at the third session, and we have been moving steadily on this thing.

Our consultant is here, if you desire to ask a direct question.

MR. STEIN: I don't know whether you are talking about speeding it up or slowing it down. You recognize we have a grant requirement, at least it is apparent to us -- and I am not talking in terms of the court order -- where we have to have a full commitment of you people to go ahead with full secondary treatment before you are going to get the grant.

That is another section of the law.

MR. LUBETKIN: May I ask what consists of a commitment?

MR. STEIN: Pardon?

MR. LUBETKIN: What do you require to make a commitment? We will make the commitment.

MR. STEIN: Again, we are going to meet in executive session and we will do this, but let me give you the key point that I see in your operation as far as Federal funds to the commitments are going to be.

On this we are going to work, I will tell you, very closely with Mr. Sullivan, Mr. Schwartz and the State of New Jersey.

As far as I can see, in addition to your other commitments, they are going to send this over to Enforcement to see if you are in compliance with the enforcement requirements of the Federal Government and of the State before making the grant; and before we do that, I am going to have to get a reading from Mr. Sullivan and Mr. Schwartz, and I am going to have to come to some kind of judgment myself.

I think this is the crucial point, or the mechanism, at least for us. on working the ground rules on how we are going to consider processing the grants.

I wouldn't say this is going to go one way or the other. I think we are right at the nub of this. One of the real issues we have here is if you are in violation of a State court order, this is not a small matter.

MR. LUBETKIN: We understand.

MR. STEIN: All right.

MR. LUBETKIN: I am just saying that without qualification at this point, we are moving as rapidly as possible.

I don't know what you mean by a further commitment. There is a resolution on the books of the Commissioners which says we shall comply and move as rapidly as possible with the Hudson River Enforcement Conference recommendations. There are no qualifications in that.

That statement of the finances was my own, and not the Commissioners'. I was trying to be practical.

MR. STEIN: Yes. Mr. Lubetkin, we talk the same language. I always figure a public project is under way when the financing is arranged.

MR. LUBETKIN: We don't even have the legislation. It was passed, but the Governor has not signed it yet.

MR. STEIN: I understand that, but even getting the legislation on the books, as my counsel points out, who is here, doesn't insure that you have the finances arranged.

MR. LUBETKIN: Well, now I want to ask a question, and this is a very pertinent question, because it involves our municipalities.

We have a town, the Town of Bloomfield. This town was going to erect sewers. It made application for Federal funds. They were told that they could not receive Federal funds until the Commissioners made a binding committment to abide by the Hudson River Enforcement Conference recommendations. They wrote to us.

The only thing we could do is send them a copy of our resolution. We are moving as rapidly as possible.

Now, if you tell them that our statement that we are moving as rapidly as possible is not sufficient. then you are holding up much-needed sewers.

I don't know what we have to do to convince you of our desire to comply.

MR. STEIN: You know, just repeating this in a firm voice isn't going to get past the issue.

I think Mr. Sullivan told you what the commitment of the Hudson River Conference was, that you be completed in 1970. Nothing that you have indicated gives us any belief that that is going to be done, or that you are going to comply with the court order. This is what he has stated.

MR. LUBETKIN: Do you want me to say that we will be complete in 1970? You would know I would be lying, and I would know I would be lying.

MR. STEIN: I admire your candor because we wouldn't accept that.

MR. LUBETKIN: Then what could you accept that I used.

MR. STEIN: No. The issue is--this is what I have to point out--you have given us a proposed time schedule --

MR. LUBETKIN: Which is practical.

MR. STEIN: -- that you will be finished in 1976 We will have to take this up with the State in light of the obligation that we all have, the commitments we have made, and decide what is equitable under the circumstances.

But please understand that you have not given a commitment here that you are going to be in compliance with the conference recommendations.

MR. LUBETKIN: Then there is nothing I can say further on that.

MR. KLASHMAN: Mr. Stein, may I tell you what we need in addition to your enforcement requirements?

MR. STEIN: Yes.

MR. KLASHMAN: What we need is a very firm schedule with specific dates, as to exactly when you are committing yourselves to engaging your engineers to design the plant, and, immediately following that, the date that you plan to construct the plant, and also the date that you plan to have the financing so as to go ahead with the construction.

We also want the date that you are going to finish with the construction. You said 1976.

MR. LUBETKIN: I can fill in the other dates too.

MR. KLASHMAN: What we need for our part, in addition to what Mr. Stein needs, is these firm committed dates. This is what we get from every other community. We get a firm schedule.

MR. LUBETKIN: I thought I gave a firm schedule.

MR. KLASHMAN: For example, have you engaged your engineers for the final design of the plant?

MR. LUBETKIN: That can't be done because we don't have a criterion. We have engaged the engineers for the first part of it, which carries us to 1971, and that is the studies. Now, this engineer is working on it.

We can't engage an engineer to start on a design. When we sign a contract with an engineer, there are dollars and cents in there. We don't even have an estimate of costs. We can't have a contract with an engineer that is open-end.

MR. STEIN: Mr. Lubetkin, may I ask you to do this? We have some other speakers. While they are speaking, could you possibly get together with Mr. Klashman or one of his people and give him just a rough-in of those interim dates for consideration of us at the executive session? If you can do that, okay.

Is that possible?

MR. LUBETKIN: I can give him rough-in dates.

MR. STEIN: We understand it is rough, and how you are doing it. Okay?

MR. LUBETKIN: All right.

MR. STEIN: All right.

Are there any other questions or comments?

(No response..)

MR. STEIN: If not, thank you very much, Mr. Lubetkin. I think this has been very useful, really, and I think we are a lot closer together.

MR. LUBETKIN: Thank you.

MR. STEIN: Thank you.

May we hear from Mr. Schrodt?

STATEMENT OF
MR. PAUL W. SCHRODT
IRONBOUND CHILDREN'S CENTER
NEWARK, NEW JERSEY

MR. SCHRODT: My name is Paul Schrodt. I live at 157 Adams Street in Newark, and I am a resident of the Ironbound section of Newark, which is the part east of the railroad tracks that is bordered on two sides by the Passaic River.

As a resident of the Ironbound community of Newark, and a staff worker at the Ironbound Children's Center, I have come to this conference with a group of parents and staff workers from the Children's Center to demonstrate our concern over a matter that has been neglected by governments, public trusts, and private industry alike. This neglect is, to our way of thinking, an inexcusable breach of public responsibility.

We parents and young adults do not enjoy living in an environment which has been heavily polluted with sewage and industrial waste. Our chief concern, however, is for the children of Newark. The children need to grow up in an environment with clean air, clean water and adequate space for outdoor recreation. Bad air and bad water do great damage to both body and spirit.

Children do swim in the Passaic. If you walk along Riverbank Park in Newark on a summer afternoon, you will often see children swimming near the Mott Street storm sewer, which, I believe, is identified as Location No. 25 on Map 1 in your book.

Along with other parents and young adults, I know our youngsters should not swim in the river, but the children do not really understand my concern. They know the river is dirty, but they also know that it is cool and somewhat refreshing and full of curiosities for the young explorer. I think I need not elaborate on the kinds of things you should expect to find while swimming in the Passaic.

(Laughter.)

These children are being cheated by not having a clean river to use for recreational purposes. Some of them get sick, only to return once again to the river. How many parents understand the full extent of danger? What is this conference going to do to bring that information to the general public?

This has been, for the most part, a conference of people described as experts. It was not well publicized. Much of the language has been technical and it has been hard for me to sit through the baffling array of statistics. People living in Ironbound and other communities along the Passaic don't need mountains of statistics to recognize the problem. We live with it.

What we do need to know is, first of all, what are the specific dangers to ourselves and future generations?

Second of all, who is directly responsible for the pollution of our river?

Thirdly, what can we do to make government and industry exhibit some real responsiveness to the public?

We are concerned citizens who are ready to take action. It seems clear, especially after listening to the apologies and buck-passing that characterizes these proceedings, and noting the lack of participation on the part of local municipalities and private industries, that the people who are directly responsible for keeping our waters clean are not giving this problem the urgent priority that a crisis situation demands.

If the State has done "all that is humanly possible" through litigation, then legal action must be supplemented by public action. Public and private officials must be pressured to respond.

If this conference is to fulfill its real responsibility, it must give large numbers of people the information and resources they need to become directly involved.

Now that we have asked what can we do, I thoroughly expect you will not turn a deaf ear.

Thank you very much.

MR. STEIN: Thank you, Mr. Schrodt, for a very excellent statement.

MR. SCHRODT: I have just two more things, quickly.

First of all, I would like to take that boat trip up the river, if that can be arranged; and, second of all, is there anyone here representing the city of Newark?

We have heard a lot about their responsibility in this matter, and yet we have not heard anything on their part.

MR. STEIN: Sure. Well, according to the rules here, Mr. Schrodt, they really don't have to answer.

MR. SCHRODT: I understand they don't, but I assume that we are all here and we are interested in doing a job.

MR. STEIN: I understand that. We invited them and we called them, and I made a remark about that before.

There is one comment I would like to make, and that is you made a very interesting observation. I see press releases come over my desk this thick every day. You said this meeting was not well publicized.

When we put out anything here, the public official who is in this field gets all excited and thinks this is a tremendous press release from the Secretary, and there are reverberations all up and down the line. I suspect the reaction of the public is what you put forward here, that the meeting has not been well publicized. I think all the public officials should listen to that a little because this is the kind of impact I think we generally do have.

Are there any questions?

MR. KLASHMAN: Mr. Schrodt, Mr Crotty is in back of the room.

Mr. Crotty, would you raise your hand?

Would you go back there and make arrangements with him to notify you when the trip takes place? You will be welcome.

MR. STEIN: Just a moment.

MR. GLENN: I just want to say, Mr. Schrodt, that we feel something like you do.

The seats we have here are the same type that we have been sitting on, and I agree with you. Some of this gets quite lengthy at times.

MR. SCHRODT: Thank you again.

MR. STEIN: Thank you.

Mr. Calise?

Do you know, while Mr. Schrodt is going back, I wish there were an easy substitute for this.

No one, and you have been here all day, is against pollution control. It is just that the details begin slipping through our fingers, and unless we can work them out painstakingly, we don't do the job. I don't know any other way to do it.

Mr. Calise?

STATEMENT OF

MR. JOSEPH B. CALISE

PRODUCTION MANAGER

BENJAMIN MOORE & CO.

NEW YORK, NEW YORK

J. B. Calise

MR. CALISE: Mr. Chairman, I represent Benjamin Moore & Company, manufacturers of paints. They are located at the lower end of the city of Newark along the Passaic River.

We had not planned to make a statement, but I thought it was necessary in the light of two things that were brought up today.

First, in Table No. 6 following Page 39 of the report that was given by Mr. Bromberg, it lists Benjamin Moore & Company, and it would indicate that we are the owners and operators of two lines feeding into the Passaic River, one a 60-inch line and the other a 10-inch line.

The 10-inch line is our property, but, for the record, I would like it noted --

MR. STEIN: Mr. Calise, we have a load of engineers up here. Give them a better clue.

MR. KLASHMAN: What number is the item on the table?

MR. CALISE: It is Table 6, as I indicated, following Page 39.

MR. KLASHMAN: I've got it, No. 21.

MR. CALISE: No. 21. Right.

MR. STEIN: Okay.

MR. CALISE: And the 60-inch line is, in fact, the property of the city of Newark, sitting on a 20-foot easement going through our property, so I just thought that that should be clarified. That was the first point.

The second point that was brought out in Mr. Lubetkin's discussion and in the questions that followed was a statement made by the Secretary, and I would just like to say this: that, quite frankly, we were a little bit disturbed as an industry with the article that appeared--and I have a copy here--on November 18, 1969, in the Clifton Passaic Herald News.

The article reported that the Secretary had made this statement the prior day in the Boston area, and the headline says, "Hickel threatens crackdowns on Passaic River polluters."

Since our industry was named therein, Benjamin Moore & Company, I feel I should explain what took place prior to this article, very briefly.

On August 15, 1969, we received a citation over the signature of Mr. Segesser of Mr. Sullivan's Department of Health of the State of New Jersey, indicating that through this 10 inch line we were polluting the Passaic River.

Quite frankly, we were not aware of this. It was not by intent, but they were very, very nice to arrange a meeting with us at their Trenton office. We met with Mr. Douglas Clark, and after the details were explained, the necessary abatement procedures and practices were initiated, and October 20 we sent a letter of intent, explaining what we had done to Mr. Sigetta. This letter was sent by certified mail, and so forth, and not having heard from this office any more since October 20 we assumed and continued to assume that the procedures we had taken were sufficient and satisfactory.

I realize that sometimes information does not filter up as quickly as it filters down, but, frankly, we were a bit annoyed when we saw this November 18th article, because we felt that we had taken immediate action to comply with the wishes of the State of New Jersey Department of Health.

I just wanted to put that on the record, sir, and I thank you very much for this opportunity.

MR. STEIN: Thank you.

Are there any comments or questions?

MR. SULLIVAN: Representing the State Department of Health, I would corroborate the testimony just given.

MR. STEIN: Right. Thank you for your addition to the record.

May we have Mr. Stephen C. Brown of the Tenneco Chemicals?

STATEMENT OF

MR. STEPHEN C. BROWN

DIRECTOR OF ENVIRONMENTAL SCIENCE

TENNECO CHEMICALS

NEW YORK, NEW YORK

MR. BROWN: Mr. Stein and Gentlemen:

My name is Stephen Brown. I am Director of Environmental Sciences for Tenneco Chemicals.

I came today as an observer to this meeting. I wasn't invited. I heard about it second-hand, and I was handed, upon my arrival, this document which lists us in Table 6, No. 55.

We have 15 plants in the State of New Jersey. Some of them are very old. This is the oldest. To my knowledge, it was constructed prior to the First World War. It has been under several owners, prior to its acquisition and incorporation into Tenneco.

Because of the nature of plants like this, and the complexities of running a new type of chemical operation, we have established a very vigorous environmental science program which has been in operation for over two years.

It has been our major modus operandi to work hand in glove with the people in Mr. Sullivan's department, and I believe that the facts will attest to our cooperation and our desire and our spending quite a lot of money.

Therefore, it comes as something of a surprise to me to find that apparently there have been many visits to a plant of ours by apparently FWPCA people, and that they have found pollutants in the water that our tests which are done on a regular periodic basis and are checked by an outside consultant of the highest regard, have never indicated.

Look at the numbers you have there.

MR. STEIN: By the way, that is Item 55, isn't it? I am just doing this so our engineers can follow that. You are reading from the table, aren't you?

MR. BROWN: Yes, sir.

MR. STEIN: And the map identification number is 55. Is that correct?

MR. BROWN: Yes, Tenneco Chemicals, Heyden Division, Garfield.

MR. STEIN: All right. Go ahead.

MR. BROWN: We have been taking regular periodic samples of the BOD at our various outfalls. These indicate a magnitude between 5 and 10 times greater than the high numbers that we have.

In terms of the suspended solids, the indication is 10 to 20 times greater than our information.

But I think the most significant factor of all is the listing of coliform which, if I understand it correctly, is something that we trace back to human wastes. We do not and have not, since I have been able to trace back the maps of this old plant, have any sanitary sewage discharge that goes anywhere near the Passaic River, except into the sewerage system and down into the treatment plant.

What I am saying here is, there may be some information here that we may not even be aware of. We have not been testing for coliform as a matter of procedure. But my point is, it says back in the text, I believe on Page 38, that the visits to the plant were made on an open basis, that the people who were making the inspections did come into the plant, identify themselves, explain what they were doing and ask for corroborating information. None of this occurred at our plant, it is our feeling.

We feel, like all the other people here, that it is necessary to clean up the river, and we have a very practical stake in this, because we use a fair amount of the Passaic water for cooling purposes and we would like to have it cleaner. We therefore instituted a study slightly less than a year ago to go back and trace back as far as we possibly can all the blueprints to find where all of our lines are. We have uncovered some lines very recently which may possibly, in the event of an upset or a spill or a leak of some sort, lead pollutants into the river.

Accordingly, we have now in the engineering stage, and money is appropriated for it, a program going now which will permanently divert all of these things.

My point in making the presentation, however, is that I feel as we have grown, and as we have benefited from our relationship with the State of New Jersey, I think it is equally important that when FWPCA wants to become involved and does become involved in this sort of a program, it is incumbent upon them, both in terms of efficiency and in terms of cost saving, to cooperate and to make known to industry what their plans are, what their requirements are, and how industry, in fact, fits into their plans and can be of assistance.

That is all I have to say.

MR. STEIN: Thank you, Mr. Brown.

I wonder, is Mr. Walker here? Will you raise your hand? I wonder if you could get together with Mr. Walker and the State people and see if this can be worked out. There is no reason for a factual difference in the record, and I think certainly this was the intent, that you know what our people were doing and the State people were doing. In conjunction with the State and with you, I hope this can be worked out so that we can all agree on the facts of the situation as they relate to you.

If there is a difference in the laboratory procedure, then you can work something out and see if we are talking about the same thing, because I thoroughly agree with you that something like this should be cleared up; and as soon as we get a report from Mr. Walker, I will be glad to send you the agreed-upon factual statement for the record.

MR. BROWN: Thank you.

MR. STEIN: Mr. Klashman.

MR. KLASHMAN: Mr. Brown, I too will be very happy to get this clarified.

I would like to get something clear in my own mind. As I understand it, you have indicated that the Tenneco Chemical Company is discharging raw, untreated wastes of a lesser magnitude to the river?

MR. BROWN: No, sir. No, sir.

MR. KLASHMAN: That is not what you are saying?

MR. BROWN: No, sir. It was indicated in the item there are four outfalls. The two big ones are cooling waters.

MR. KLASHMAN: The 22-inch and 24-inch?

MR. BROWN: The 22-inch and 24-inch. There is some confusion about the 12-inch and the 13-inch, because we measure 11 and 15, but let's put it this way: one of them takes a flow of approximately 50 gallons a day, the blow-down from the boilers and that sort of thing, and it operates once a day when this is done.

MR. KLASHMAN: When you say the blow-down from the boilers, you mean the chemicals?

MR. BROWN: Steam.

MR. KLASHMAN: What about the chemicals that go into the boilers as part of the --

MR. BROWN: There may be a small amount there, but again we are talking about 50 gallons a day.

MR. KLASHMAN: Okay. You are putting in 50 gallons of boiler water blow-down through a 12-inch pipe or 11-inch pipe?

MR. BROWN: This apparently seems to be the case. I suspect, if I may say so, that many years ago that pipe was used for other purposes.

MR. KLASHMAN: Right, and the other pipe, sir?

MR. BROWN: The other pipe is a system of collecting certain storm drainage and that kind of thing around the plant, and we suspect here that there are some places where we may have just runoff on some of these things, and when there is a flow that will go into the chemical cooling.

MR. KLASHMAN: I see.

MR. BROWN: On this program, we have done the study, we have the map, and it is just a question now of figuring out the piping elevations and that kind of thing.

MR. KLASHMAN: Thank you very much, sir.

MR. STEIN: Thank you. I hope you will work this out with our people, because this will take us on the way to a solution.

MR. BROWN: Yes.

MR. STEIN: Thank you.

Are there any other problems, or does anyone else want to make a statement whom we have not called upon?

(No response.)

MR. STEIN: We have a statement from the Interstate Sanitation Commission, Mr. Glenn.

STATEMENT OF
MR. THOMAS R. GLENN, JR.
CONFEREE AND DIRECTOR AND CHIEF ENGINEER
INTERSTATE SANITATION COMMISSION
NEW YORK, NEW YORK

MR. GLENN: You can relax. This is only one page long.

The text of this statement was prepared a week ago, Mr. Chairman, and while the discussion today has reviewed much information already well known, I believe the statement originally prepared is still appropriate.

The Interstate Sanitation Commission has appeared regularly as a conferee in all of the sessions of the Hudson

River Conference and has made statements. The last of these sessions was only five months ago. Consequently, little purpose would be served by repeating the routine portions of these statements or by recapitulating matters so recently presented.

The notice of this session was contained in two telegrams dated August 29, 1969, and September 3, 1969, respectively. These notices provide no information concerning the reason for reconvening of the conference at this time. This has been a cause of some confusion because at the conference session of June 18, 1969, the conferees (including the Federal Water Pollution Control Administration) expressly agreed that the next session of the conference would be late in 1970.

Informally, we have been given to understand that the Secretary of the Interior now wishes to present certain matters relating to the Passaic River. The record of past conference sessions reveals no previous indication of a specific nature that the Passaic River is within the area to be actively considered. In this connection, it should be noted that the treatment and disposal system of the Passaic Valley Sewerage Commissioners has received some attention, but the discharges of that system are not into the Passaic River.

We also note that the State and interstate conferees have not yet received word concerning the views or recommendations of the Secretary of the Interior relative to the conference agreements of June 18, 1969.

For these reasons it does not seem appropriate for the Interstate Sanitation Commission to make a public statement at this time.

Thank you.

MR. STEIN: Any comments or questions?

(No response.)

MR. STEIN: If not, thank you, Mr. Glenn.

We will call on New York.

STATEMENT OF

MR. DWIGHT F. METZLER

CONFEREE AND DEPUTY COMMISSIONER

NEW YORK STATE HEALTH DEPARTMENT

ALBANY, NEW YORK

MR. METZLER: Thank you, Mr. Chairman.

A full report of the progress on the Hudson River was made at the June enforcement conference held in New York City.

We are following that schedule in New York. We have had no questions about it, and unless there are some questions. I have no further testimony.

MR. STEIN: Are there any further comments or questions?

(No response.)

MR. STEIN: If not, the conferees will go into executive session.

I want to commend Mr. Glenn for this. Whether you agree with him or not, he still is the best technical writer that we have around the country, or at least there is no better.

Are there any comments or questions?

(No response.)

MR. STEIN: If there are not, we will go into executive session and we will have an announcement by 6 o'clock.

(Whereupon a recess was taken until 6:05 p.m.)

MR. STEIN: We are ready to reconvene.

I am pleased to announce that the conferees have come up with unanimous conclusions and recommendations. I will read these. I think most of the conferees are here, and if anyone of the press or anyone else has some questions, he can direct them to any one of the conferees here, either publicly or get them aside when this is over.

It is recommended that:

1. The Passaic Valley Sewerage Commissioners take necessary action without delay to comply with the administrative

order dated March 31, 1967, issued by the State of New Jersey and with the previous recommendations of this conference to abate water pollution.

The State of New Jersey has taken appropriate legal action to require compliance with its pollution abatement order of March 31, 1967, issued against the Passaic Valley Sewerage Commissioners and has also taken appropriate action against other municipalities and industries that pollute the lower Passaic River.

2. Municipalities in the Passaic Valley Sewerage Commissioners' service district take remedial action to eliminate illegal pollutional discharges to storm sewers.

3. The activities of the Interstate Sanitation Commission in analyzing combined sewer overflows in the Hudson River Conference Area are recognized. The conferees will participate with and support the Interstate Sanitation Commission in a detailed examination of stormwater overflows as the first stage in the development of a remedial program, as needed; the New Jersey State Department of Health will carry out its portion of this activity in the Hudson River Basin outside the jurisdiction of the Interstate Sanitation Commission. A joint report on this subject will be made to the conferees at the next session.

I want to thank you all for coming and participating in the conference.

The conference stands adjourned.

(Whereupon, at 5:10 p.m., the conference was adjourned.)

CELANESE

December 12, 1969

Mr. Murray Stein
Assistant Commissioner
Federal Water Pollution Control Administration
Department of the Interior
Crystal Mall
1921 Jefferson Davis Highway
Arlington, Virginia

Re: Report on the Quality of the
Interstate Waters
of the Lower Passaic River and
Upper and Lower Bays of New York Harbor

Dear Mr. Stein:

Referring to the above-captioned publication which was made available at the Fourth Session of the Hudson River Abatement Conference on November 25th, we have noted recordation of erroneous data concerning a Celanese facility and wish to set the record straight.

We have particular reference to data presented on page 38 and in Table 6.

On Table 6, designated by map identification no. 5, outfall through a 6" pipe characterized as "BOD = $>$ 430 mg/l, Q = 0.25 mgd" is recorded. Foot-note 4 attributes this data to the New Jersey State Department of Health. The second full paragraph on page 38 reports that "Both surveys were conducted at or near low tide and discharge pipes were located, measured, sampled (if flowing) and identified as accurately as possible with prominent landmarks, municipalities, streets or industrial plant names. Supplemental surveys were conducted by car in areas inaccessible by boat and also to substantiate and/or further clarify the boat observation. Visits were made to industrial plants and municipal city engineers' offices to verify field observations, particularly in complex of urban and industrial park areas where identification of a discharge or pipe with a single source was difficult. Attempts were made to identify all outfall pipes, whether discharging an effluent or not, and regardless of the pollutional characteristics of the discharge."

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The data concerning Celanese reported on Table 6 is erroneous. To the degree that it is supposed to relate to companies identified on Table 6, the second paragraph on page 38 does not accurately represent what occurred in the case of Celanese.

On or about August 21st, a Celanese facility located on Doremus Avenue in Newark received an abatement order from the State. Unfortunately, the order was couched in very broad terms and did not inform the reader of the particulars being addressed. Since we had no prior notice of state dissatisfaction with the effect upon the Passaic River of our operation, we were at a loss. Further, we were dismayed by newspaper publicity which made reference to "repeated warnings" received by recipients of such orders. As to whether others who received such orders had been favored with such warnings, we cannot say; however, Celanese had not.

Despite immediate efforts to determine the nature of the State's complaint, it was not until September 18th that we were able to discover that a sample was taken on May 21st from a pipe supposedly leading from our premises into the river. Such a pipe was not known to our plant management. The report of sample analysis which we were shown was not very meaningful because of patent internal inconsistencies.

When the pipe was located, it proved to be "dead" and was not connected to our facilities or to anything else! Indeed, the pipe proved to be silt-filled.

Immediately upon locating and exploring the pipe, we invited a representative of the New Jersey Department of Health to visit our premises and inspect the pipe. He did so. To the best of our knowledge, this was the first visit of Department personnel to our premises in connection with the "...field observations..." remarked on page 38 of your Report.

Thereafter, State officials pointed to outflow from a nearby drainage ditch which runs along one boundary of our property. The ditch is immediately adjacent to the site of the pipe. That there was a "discharge" is undisputed. Consisting of tidal and fresh water seepage, it appeared as an intermittent flow as great as 0.5 gpm or, assuming a twenty-four hour continuous flow, 720 gpd rather than the 250,000 gpd recorded on Table 6. Contemporaneously with our September meeting, the State conducted another sampling and we have no particular argument with the BOD count then developed. Accepting it, a 0.5 gpm flow for twenty-four hours would amount to BOD loading of some three pounds per day.

I recognize that F.W.P.C.A. was not itself responsible for provision of the fallacious data appearing on Table 6. As the attached letter to the State indicates, we have taken steps to avoid even the minute basis which remained for the State's revised complaint after demonstration that the pipe in question was not a pollution source.

Before closing, lest it appear that the facility in question is never visited on a routine basis by local authorities, I must comment that representatives of the Passaic Valley Sewerage Commission are familiar with the premises, that they have criticized our operation on occasion, and that we have worked with them to eliminate any basis for complaint.

I thank you for your consideration and your invitation to set the record straight. Celanese is, and has been, most concerned with the quality of its environment. While we, in common with most of our society, are not perfect, we aspire to excellence and are greatly disturbed by an undeserved reflection on our effort.

Very truly yours,

Dr. E. W. Kleppinger
Manager,
Environmental Management

Attachment

CELANESE

OFFICE OF
GENERAL COUNSEL

November 14, 1969

Mr. Douglas M. Clark
Supervising Public Health Engineer
Division of Clean Air & Water
Department of Health
State of New Jersey
John Fitch Plaza
P.O. Box 1540
Trenton, New Jersey 08625

Dear Mr. Clark:

Not having any response to my several telephone calls of recent weeks, I am taking the liberty of writing in order to supplement our conversation of October 20th. Subsequent to receipt of your letter dated October 21st, and in context of our conversation concerning Mr. Harding's observation of a flow from the surface water drainage ditch in question, I conferred with appropriate plant personnel.

They confirmed the existence of an interruptible flow independent of surface water. Samples taken from that flow do indeed have a B.O.D. which is much greater than the figure which you verbally advised is typical of the river as it flows by our terminal.

By way of background, the terminal area in question is located on reclaimed ground. At high tide, the river traditionally has "backed into" the ditch. At low tide, flows toward the river as great as 0.5 gallons per minute have been noted. It has not been possible to discriminate quantitatively between what may be tidal seepage from ground abutting the ditch and what may be seeping from a shore source(s) quite independent of tidal action. All which is certain is that there is a seepage from or through the ground which unpredictably terminates and resumes but can achieve the 0.5 gallons per minute rate during ebb tides.

As you know, all of our product lines are above ground. Only fire mains and sewer conduits are underground. We are quite confident that both systems are sound. In light of the scarcity of the total flow and our inability to determine what portion of it may emanate from a non-tidal source, we have found

(cont'd)

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Mr. Douglas M. Clark - 2 - November 14, 1969

it impractical to trace the origin of whatever may be the non-tidal portion.

If one accepts your September sampling (the report of analysis of the sample which pre-dated issuance of your order appears most unlikely - note the B.O.D. - C.O.D. relationship) approximating 400 ppm B.O.D. and 2,000 ppm C.O.D. and assumes a constant flow (as opposed to our observation of interruptability) of 0.5 gallons per minute, it would seem that we are talking about a maximum discharge approximating 2.5 pounds per day of biologically oxidizable material and 12.5 pounds per day of chemically oxidizable material. This, I am sure you will agree, is incredibly small in terms of the total problem which concerns us all with the Passaic River.

Nevertheless, we have taken steps which I believe you will find acceptable. After removal of the pipe of which we have spoken in the past, regrading to preclude entrance of normal high tides into the drainage ditch was accomplished. In addition, the ditch itself has been tiled in such manner as to preclude any significant amount of ground seepage although we continue to contemplate the use of the ditch as a rain water run-off.

Obviously, to the extent that water has been filtering through the ground from a natural source or one not under our control, it will find a new path to the river. However, be assured that all local management continues to be alert to the total problem and will be delighted to cooperate with your organization at any time in the future.

Very truly yours,

John A. Maher, Jr.
Assistant General Counsel

JAM:jm
69-855

cc: Dr. E. Kleppinger

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PASSAIC VALLEY SEWERAGE COMMISSIONERS
790 BROAD STREET
NEWARK, N. J. 07102

SEYMOUR A. LUBETKIN
CHIEF ENGINEER
THOMAS L. DU[illegible]N, JR.
ATTORNEY
MRS. CHARLES [illegible]EDEL
CLERK-TREASURER

February 19, 1970

Mr. Murray Stein,
Conference Chairman
U. S. Department of the Interior
Federal Water Pollution Control Administration
Washington, D. C. 20242

Re: Fourth Federal-State Conference
Pollution of the Waters of the Hudson River
and Its Tributaries - November 25, 1969

Dear Mr. Stein:

If you recall, at the conference in the Robert Treat Hotel, the Federal Water Pollution Control Administration submitted a Report on the Quality of the Interstate Waters of the Lower Passaic River and Upper and Lower Bays of New York Harbor (CWT 10-15), dated November, 1969. This report was made part of the conference record, and was given to me the morning of the conference, so that I had no opportunity to examine it in detail.

I have subsequently examined this report and feel that errors and innuendos in this report require comments from the Commissioners. I am enclosing (in triplicate) my comments on this report, which I feel should be made part of the official proceedings of the conference in order to be fair to the Commissioners' position.

The Commissioners would appreciate your taking care of this matter. I also feel that, if possible, copies of these comments should be made part of the report (CWT 10-15), or the report should be corrected in the designated areas, so that future readers of this publication receive the complete information concerning this matter.

Very truly yours,

S. A. Lubetkin

S. A. Lubetkin
Chief Engineer

cc: Messrs. Sullivan,
Walker, Segesser,

Comments on CWT10-15 Report on the Quality of Interstate Waters of the Lower Passaic River and Upper and Lower Bays of New York Harbor, dated November 1969, issued by the Federal Water Pollution Control Administration.

By: S. A. Lubetkin

Dated: February 2, 1970

On page vii and viii, in the last paragraph, the wording of the"highest use of the waters" is vague and misleading. It states "in the upper bay limited recreation and fish survival and in the Passaic River upstream to the head of tide-fish survival." It should have read, "in the Passaic River, classified TW3, tidal surface waters used primarily for navigation not recreation. These waters although not expected to be used for fishing, shall provide for fish survival." The Commissioners believe the quality of waters of the Passaic River are above that required by the approved Federal and State Water Quality Standards. We are appending results of independent laboratory samples and tests taken December 5, 1969, to prove this.

On page viii, paragraph 3., you state,"Pathagentic organisms have been isolated in the effluent of the Passaic Valley Sewerage Commissioners, in the waters of the Upper Bay of New York Harbor, in the vicinity of the Commissioners' dispersal field and in the waters off the bathing beaches of the Lower Bay of New York Harbor." To be honest you should have also stated, pathagentic organisms have been found in the discharges of the sewers of Manhattan and in some other areas which could reach the bathing beaches of the lower Bay of New York Harbor.

On page viii, paragraph 5., this statement, is denied by the Commissioners. They are moving as rapidly as possible and have only recently been able to have a method of financing the tremendous costs that are needed for the treatment plant to be brought up to that which is demanded, namely, 90% removal of B.O.D..

On page 9, paragraph 7., the first paragraph on the page states that the responsibility of the Commissioners, to maintain the quality of the Passaic River as prescribed are not being carried out. This statement is an absolute lie. If the Federal Water Pollution Control Administration needed any proof, they could have only come to the Commissioners' Office and see the files and the work that the Commissioners do, in order to limit the discharges into the Passaic River in order to keep the quality required by the statute.

There is a complete misunderstanding between what quality is required by statute and what the Water Pollution Control Administration has been implying with its statements. These are not swimming waters and to have a Federal Official state, "He would not have one of his sons swim in it" is misleading to the goals of the Water Quality Standards of these waters. I would not have my son swim in it either, he might have an arm or leg amputated by a passing tugboat.

Paragraph 8. states "Industrial and untreated municipal waste discharges are degrading the quality of the water of the Passaic River." There are no untreated municipal waste discharges except those overflows during times of storms, for which the system was designed and which the River could assimilate. Industrial waste discharges are limited so that the river is not of a lower quality then that required by its classification. To use the word degrading is misleading to the average person. Any discharge possibly even rain water that carries dust and absorbed gas of atmospheric pollution could be "degrading", the point is, the river can assimilate the amount of industrial material discharge without being degraded below the water quality standards set up by the State and approved by the Federal Government.

Page 2., the Commissioners have previously reported that the grit facilities were inadequate and that after each storm, grit entered into the sedimentation basins causing breakdown. As soon as the storm was over, repairs were made and the basins were put back into operation. The Commissioners do not have sixty basins, they have sixteen basins and sixty sub-basins. The Commissioners realize that this part of their plant needs improving and are taking steps in this direction.

Page 3., the implication concerning the court action was that it was still in process. This is old hat. The court action was to determine type of jurisdiction, not whether the Commissioners would comply with the requirements of the Hudson River Enforcement Conference. At the third Hudson River Enforcement Conference, the Commissioners agreed to comply and submitted a time schedule wherein they said the work would be completed by 1976. The court action is over. The Commissioners lost the case and the Commissioners are proceeding as expeditiously as possible.

Contracts have been let with consulting engineers, for pilot plant studies, in order to get the design parameters. The studies are expected to be completed in 1971. The design will take two years to 1973, construction will take the remaining three years and by the end of 1976, a complete operating plant will be available. This is no news, this was known, prior to the writing of this report by the Water Pollution Control Administration, yet no statements are made concerning this matter. It is not any uncooperative attitude of Passaic Valley Sewerage Commissioners, that makes it impossible for them to meet the 1970 deadline. It is the uncooperative attitude of the Federal Water Pollution Control Administration, which will not accept a reasonable and true time schedule. On the bottom of page 3, you talk about the survey of the Commissioners' waste treatment plant, and its discharge into the New York Harbor and in the same paragraph, you talk about a survey of direct discharge in the Passaic River. This is a type of writing that has been a source of much confusion. I am beginning to wonder if it is deliberate. The confusion being that many people believe that the Commissioners' discharge directly into the Passaic River and are under the assumption that if the Passaic Valley Sewerage Commissioners' treatment plant were upgraded that the effect on the discharges in the Passaic River would be quite noticeable. This of course, as we know, is far from the truth. These are two different types of surveys and they should not have been mentioned in the same paragraph. If the Federal Water Pollution Control Administration, really wanted a fair and impartial report, there should have been a statement showing, that the Commissioners' Treatment Plant has nothing to do with the Passaic River as far as effect. They are two seperate problems.

On page 8 , you stated that, "Public Law- 1902, Chapter 48, which outlined the boundary of the Passaic Valley Sewerage district to include almost the entire water shed of the Passaic River." This is not true. The Passaic Valley Sewerage Commissioner' district is limited from the Great Falls in Paterson, to the mouth of the Passaic River at Newark Bay, about 1/6 of the Passaic River water shed, and the Commissioners have no authority over 5/6 of the basin including the long length of the Passaic River and its tributaries above the Great Falls in Paterson. The Commissioners have absolutely no jurisdiction nor can they halt much of the pollution which occurs above the Great Falls and effects the waters flowing over the Great Falls entering into the district policed by the Commissioners. You also state on page 8, that the Public Law-1907, Chapter 10. provided for the purification of the waters of the Passaic River within the district from any polluting matter, made provisions for the treatment of sewage and authorized the Commissioners to sell bonds if necessary to raise funds for the construction of sewage treatment facilities. This is not true.

It authorized the Commissioners, upon the request of the municipalities to intercept and dispose of sewage and other polluting matter for the contracting municipalities, and authorized each municipality, not the Commissioners, to issue bonds to pay for its portion of the cost of intercepting sewer and treatment plant. The Commissioners did not have the authority to issue bonds in their own name, under this law.

On table 1, following page 10, add Little Falls (partial) to the list of municipalities, which has sewage treated by the Passaic Valley Sewerage Commissioners.

On page 11, it would be, thirty municipalities.

On page 13, you talk of two intercepting sewers, the Main Interceptor and the South Newark interceptor. The South Newark interceptor does not belong to the Passaic Valley Sewerage Commissioners, but belongs to the City of Newark. It should not be included in the Passaic Valley facilities, otherwise you should include other interceptors, such as the Second River Joint Meeting interceptor, owned by another group of municipalities which discharge into the Passaic Valley facilities at the Belleville-Newark line, and the Lodi Force Main which discharges into the Commissioners' facilities at Wallington .

On page 13, where you discussed the size of the sewers, you say 4 ft. diameter, to 13.5 ft., this should be corrected to 3 ft. 9 ins., at its origin at Prospect

Street, in Paterson, to 12 ft. 6 ins., at the Newark Bay Pumping Station.

On page 14, the statement, "These by-passes are regulated by manually operated valves." You discuss the opening of the by-passes during non-rain fall periods as if it were done indiscriminately and you point out, for example, during the period of January to September 1953, by-passes were open approximately sixty percent of the time. To be fair, you should have stated that the reason that some by-passes were open was because of the pump replacements of which you talked about subsequently, and during these pump replacements, the Commissioners did not have sufficient pumping capacity at the Newark Bay Pumping Station to accommodate the peak flows. The fact that this was temporary, only during this construction period, was not mentioned. We have found that this method of by-passing was much more efficient, then the automatic methods which were available at the time, which constantly stayed open or clogged because of rags and sticks, jamming the gates and getting under the floats. The Commissioners originally had automatic regulators, found that they did not work properly, causing much pollution and were subsequently discarded.

On page 14, you also talk about the South Newark Interceptor, and the faulty valve. I think it should have been made clear that the South Newark Sewer is owned by the City of Newark and the faulty valve was

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the City of Newark's responsibility. The Commissioners ordered the City of get the valve repaired but the Commissioners had absolutely no authority to repair the valve themselves.

On page 15, you talked about screens and grit facilities. The recommendations of Bogert Childs, were estimated cost 9 1/2 million dollars. The Commissioners did not have the funds. The repairs and improvements actually made were recommended by Metcalf & Eddy, and cost the Commissioners approximately 1/2 million dollars. It was essential that these be done as a stop-gap measure, because the old screens were breaking down and the Commissioners did not have the funds to implement the proposals of Bogert & Childs. The new facilities being recommended by Manganaro, Martin & Lincoln will have new screening and grit handling facilities of adequate capacity. Plans and specifications for this job will come out for advertising sometime in May or June 1970. The Commissioners will apply for Federal Aid and if they are not delayed these will be implemented and installed immediately.

On page 17, you make a statement, "The 1954 report revealed that one of the Gate House sluice gates was inoperable and remained open serving as a constant drain of raw sewage through the by-pass conduit to Newark Bay." This statement is not true. The gate is operable and always has been operable, and the statement in the 1954 report stated that the valve remained partly opened and served as a constant drain for the by-pass conduit, which in turn drains the vaults under the sedimentation basin from ground water infiltration. This drainage did not go into Newark Bay but went into the Commissioners' suction sewer which thence was pumped up into the sedimentation basins and was treated. While this gate was open, it was impossible to by-pass sewage around, the plant into Newark Bay, because the sewerage would enter into the suction sewer and basin galleries. Changes have been made subsequently wherein sump pumps were installed in the sedimentation basins so that these galleries did not have to drain through this gate. You say on page 17, that, "It is not known what, if any, corrections or improvements have been made on the facilities." You did not state that you did not ask. All the information we had was available, to you, but this report was drawn at such speed and for the soul purpose, of attempting to embarrass the Commissioners, that no attempt was made to get factual data, possibly someone was afraid that our answers might neuturalize the report.

On page 17, when describing the basins, it would have been more accurate to say, Unit 1, has eight basins, each of the eight basins consisting of three sections ; Unit two, has four basins, each of the four basins, consisting of five sections; and Unit three, has four basins, each of the four basins consisting of four sections.

On page 17, you also say that several of the automatic sludge valves were inoperative in June 1969. This is to report that all the automatic valves were operative. Sometimes the Commissioners operate some valves manually in order to get extra cleaning. It is possible during this inspection, this was being done. An inspector seeing that some valves were operated manually might assume the automatic valves were inoperative.

I would like to know what is meant by the implication, nominal maintenance? The Commissioners maintain and repair these inadequate basins as well as they can be maintained under the circumstances. We agree renovations are necessary. The Commissioners intend to proceed to continue renovating these, until they do the job required. Basically gentlemen, what has happened, is that despite our up-grading, the volume and quality of sewage from this area is completely out-running our facilities. In our new studies there will be complete changes, enlargements and other alterations , so as to take care of this problem.

On page 19, you made a statement, "At the time of an inspection by the Federal Water Pollution Control Administration, in June 1969, it appeared these beds were not being operated as intended. Weeds were observed growing in the beds." I don't know how the federal people think the beds were intended to operate, but for your information, these beds were not suppose to be used at all, unless an emergency prevailed. An emergency which would keep the sludge barge from going to sea for a long enough period, so that the Commissioners could no longer store

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the sludge, would be an excuse to use these beds as a last resort. We have not had to use the emergency facilities and the fact that weeds were growing in the bed does not preclude nor prohibit their use, in fact it would be quite impossible to keep all growth from the beds without dosing with some toxic agents which would be polluting in itself.

On page 23, you discussed the break at Gouverneur Street of the Commissioners' trunk sewer, and in it you state that the Commissioners intended to make the repair by diverting about 115 M.G.D. of raw sewage to the Passaic River during estimated 6 weeks repair period. To be fair and to show both sides of the question you should have stated, that the diversion time period of 6 weeks would occur from the middle of December to the end of January. It was halted, not because of a proven health hazard, but because it was against the policy of the state, to allow this type of discharge into the river. You also could have stated, to be fair, that the reason that the Commissioners originally recommended the diversion was that the cost of the repair with the diversion was approximately 1/2 million dollars, while the cost of the repair, pumping the sewage around the break, will exceed to 2 1/2 million dollars, and the Commissioners felt that the difference, 2 million dollars, could be better spent on permanent improvements in its plant and that the river could assimilate this diversion for a six week period during that winter time with no health hazard whatsoever. However, be that as it may, the Commissioners were over-ruled by public opinion and the Commissioners acquiesed to the desire of the public and are expending the additional two million dollars for this repair. But the presentation of your report was completely one sided and again indicates the bias of the writers.

On page 24, when discussing the results of your studies you make a statement in the second paragraph, that primary treatment facilities which receive only typical domestic waste can be expected to provide 25 to 40 percent removal of 5 day B.O.D.. Why were you not fair, and say that the Commissioners' waste was not a typical domestic waste but contained a large percentage of highly concentrated industrial waste and this expected B.O.D. removal from our primary plant could not be realized and that when most of the B.O.D. is in solution, as it is in the Commissioners' waste, very small removal can be expected from a primary plant.

On page 25, you state that the removals are below the acceptable efficiency ranges indicated for typical municipal waste treatment plants. Why did you say Passaic Valley was not typical with its high concentration of industrial waste?

On page 25, in the third paragraph, you say, "Much of the inefficiency of the settling tanks can be attributed to the poorly operated and inadequately size grit chambers." I defy you or any one else to operate those chambers any better than we operate them. You would have been more honest, if you had just said, "...to the inadequately sized grit chambers which during storms cannot be prevented from letting large quantities of grit reach the basins." There is absolutely nothing about the operation of the grit chambers that can be done to change this, and the Commissioners deeply resent the inference of that statement. If any statement proved that the sole intent of this report was to slanderize the Commissioners in the eyes of the public, it is this statement. I defy the Federal Water Pollution Control Administration to set up an operation of these grit chambers, which would be better and still not by-pass large quantities of sewage, which the Commissioners are attempting to avoid doing.

On page 26, you mentioned, "Inadequate maintenance program." Both you and the Commissioners know that because of the inadequate grit collection system, during times of storm large quantities of grit are transmitted to the basins causing massive breakdowns. As soon as the breakdowns are discovered they are repaired. Unfortunately the amount of breakdowns and the length of time necessary for repairs is a function of the weather. During a dry spell, there may be little repair, and maintenance proceeds properly. However, during a very wet season, the degree of repair required, causes postponement of some of the maintenance. As far as the overflow weirs not being properly adjusted, this is practically impossible, due to the drastic hydraulic changes during breakdowns.

On page 27, an unbiased report would have said, "A liquid material introduced at Robins' Reef, effects a broad area of Lower Bay of New York Harbor after dilution."

On page 29, where you say, "...raw and treated wastewaters from sources in New York and New Jersey, including the Passaic Valley Sewerage Commissioners." You could have said,"...including the raw waste of Manhattan, and the primary treated waste of the Passaic Valley Sewerage Commissioners."

The statement that most municipalities and industries and the conference area, except the Passaic Valley Sewerage Commissioners are moving ahead to meet the conference recommendations, is entirely untrue. The Commissioners are moving ahead to meet the conference recommendations, as we have so stated. The only item that we cannot meet is the date set up in the conference recommendations, but neither will most others. The Commissioners happen to be the only ones that face up to realism and try to be honest in giving a time schedule. But the Commissioners are moving as fast as possible and in stating that we may not meet the conference recommendations, I think you should state, that it is only the date deadline that we will not meet, not the physical requirements. I also think you should have indicated that an honest survey of the others will also show they will not meet the date deadlines prescribed.

On page 30, & 31, you indicated that six stations located around the Passaic Valley Sewerage Commissioners dispersal field were sampled and the results show that the average dissolved oxygen was below that which is required by the standards of these waters. The implication being the Passaic Valley caused this. To be honest you should have stated or taken tests to prove that during the times the Bay was below standard in dissolved oxygen around the Passaic Valley outfall, it was also below standard around other outfalls such as Manhattan, Wards Island and many of the others in the area. The degradation of the water is throughout the harbor, not just around the Passaic Valley outfall giving the implication, that the Passaic Valley Sewerage Commissioners was the cause of this. Actually studies made by independent scientist on dissolved oxygen concentrations in New York Harbor indicate that if there was no discharge from the Passaic Valley Sewerage Commissioners whatsoever, the increase in dissolved oxygen in the whole bay would only be about 1 part per million, and that the water would be below the quality standards as presently set. You might have mentioned station 23, the worse of all the stations was opposite Owl Head Treatment Plant, New York City. You only showed curves of station 20, as effected by tide. Why not the other stations? Perhaps these curves might have showed a trend indicating that the low dissolved oxygen came from areas other than the Passaic Valley outfall.

You have made all kinds of statements on page 30, and 31, concerning tides. To explain the fact that all the stations appear to be bad instead of the most obvious statement that the effect of tide was negligible

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because the whole area was low in dissolved oxygen, not just in the vicinity of the Passaic Valley outfall.

On page 37, when you talk about coliform, you could have, after reporting about the 63,000 per hundred ml at FW2, then said this drops to approximately about 13,000 per 100 ml at station FW1, inside the Commissioners district, just about Dundee Dam. To be fair in this survey you might also have mentioned, that the count stays approximately the same until **TW** 4 in the City of Newark and that the City of Newark, has storm overflows, which have illegal connections . Large quantities of industrial and sanitary wastes are being discharged into the lower Passaic River, from these connections and that the Commissioners have ordered the City of Newark to correct this situation. The City of Newark is presently under a court order and a judgement has been rendered against them. They are working on this problem to correct the pollution and they expect to have this under control in about nine months.

On page 39, you say 120 pipes at 58 sites were observed discharging some quanity of wastewater. To be fair, you should say that including in your definition of wastewater is cooling water, which may not be polluting. Also on page 39, you mentioned the B.O.D.loading into the Passaic River to be 17,000 pounds per day, representing the raw discharge of an equivalent population of 100,000 persons. You could have said, that of the 17,000 pounds, approximately 12,000 pounds (71,000 people) was coming from the City of Newark which is under orders by the Passaic Valley Sewerage Commissioners, to cease polluting and in your opinion, approximately 2,500 pounds of the remainder is coming from Tenneco, which they deny and feel that an error was made in the sampling of your people.

On Table 7, you title this table, "Direct Waste Discharge By Type And Municipality-Passaic River." You should make a statement that these include many pipes flowing with river cooling water, which discharges, do not necessarily include polluting material.

On page 40, you list the discharges wherein the New Jersey State Department of Health has issued pollution abatement orders. The New Jersey State Department of Health, has not issued any pollution abatement order of any discharge of the Passaic Valley Sewerage Commissioners into the Passaic River. The orders from the State Department of Health are to upgrade the Commissioners treatment of its discharge to New York Harbor, and the implication here is entirely erroneous. Also Vulcan Materials, listed here discharges into Newark Bay, not into the Passaic River.

REMARKS ON TABLE 6.

1. Passaic Valley- does not discharge into the Passaic River.
2. Vulcan Materials - discharges into Newark Bay. River mile distance must be wrong as outlet is alongside Passaic Valley dock. In fact their discharge flows by Passaic Valley dock and many times it apears to come from Passaic Valley.

3. Ashland Chemical Co. - The discharge that appears to to come from this plant is actually Plum Creek which is piped under the Ashland Chemical Company's property. There are several companies illegally discharging into Plum Creek and are under orders by Passaic Valley to cease pollution.

4. Revere Smelting & Refining Co.- Discharges into Plum Creek. They are under orders by Passaic Valley to cease polluting.

5. Celanese Chemical Co. - Pipe indicated is a dead pipe, however river water oscillates back and forth and picks up ground pollution. They are filling in pipe and ditch.

6. Essex Chemical Co. - The discharge of this company is river water taken in for colling purposes. The reason quality is low is because Roanoke Avenue Storm Sewer, discharges polluting industrial waste into the river just north of their inlet and Plum Creek which is south of their inlet.

7. Roanoke Ave. Storm Sewer - Newark is under court order to halt pollution. Passaic Valley started court action.

8. Western Electric Co. - There are actually 14 outlets but Passaic Valley Sewerage Commissioners could find no pollution.

9. Surface Runoff, Kearny - Passaic Valley Sewerage Commissioners could find no pollution.

10. Surface Runoff, Kearny - Passaic Valley Sewerage Commissioners could find no pollution.

11. Alcan Aluminum Corp. of America - A pollution occurred from this plant due to a pump failure. This was corrected and pollution halted when brought to attention of company by Passaic Valley Sewerage Commissioners.

12. Storm Sewer-Newark - Harrison Creek Storm Sewer - under notice to halt pollution.

13. Kramer Chemical Co. - Kearny - Discharge is surface runoff of tank car washing operation. Passaic Valley Sewerage Commissioners

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has ordered them to halt pollution.

14. Monsanto Chemical Co. - Discharge is non-polluting.

15. Public Service Essex Gen. Station, Newark - Discharge is river water used for colling purposes.

18. Blanchard Street Storm Sewer - 14" sewer-polluting-Newark under court order to halt pollution.

20. Lockwood Street Storm Sewer - 60" sewer-polluting-Newark under court order to halt pollution.

21. Benjamin Moore Paint Co. - The 60" sewer is not from Benjamin Moore Paint Company, but is the Lockwood Street Storm Sewer. There are three outlets 12", 6" and 10". None are polluting.

22. Sherwin-Williams - The Brown Street Storm Sewer of Newark flows thru the plant property and is highly polluting. Newark is under orders to halt pollution. Remaining Sherwin-Williams outlets are not polluting.

24. Storm Sewer, Newark - This is the Freeman Street Storm Sewer.

26. Storm Sewer from Ind. Area Harrison - This is a storm sewer that serves the Crucible Steel Industrial Complex. The Passaic Valley Sewerage Commissioners have found oil in this discharge and Crucible Steel is under orders to halt pollution.

28. Otis Elevator, Harrison - There are 12 outlets from this company to the river. Normally all are non-polluting, however a 4° oil pipe from a compressor sprang a leak and oil went into ground and found its way into 10" overflow line thence to river. This was finally repaired November 17, 1969, eliminating violation.

29. NOPCO, Harrison - This is the Diamond Shamrock Chemical Company. There are 27 outlets from this company to the river. Their #2 outlet from building #31 was found to be slightly polluting. Analysis

indicated that probably material came from vacuum pump sealant. This discharge is being diverted to the industrial sewer and will be completed some time in March.

55. Tenneco Chemicals - These pipes supposedly drain storm areas and return cooling waters to the Passaic River. However the Passaic Valley Sewerage Commissioners have found polluting material on several occassions. The company had claimed accidental spills to floor drains. The Commissioners have ordered the floor drains and laboratory sinks reconnected to the industrial sewer. This is being done and is expected to be completed by spring 1970. I note that you show dead fish in outlet. Doesn't this contridict your claim of no fish in the Passaic River.

HYDROSCIENCE, INC.
Consultants in Water Pollution Control
316 BROAD AVENUE
LEONIA, NEW JERSEY 07605
201 WI 4-5550

DONALD J. O'CONNOR
EDWIN L. BARNHART
JOHN L. MANCINI

Associates
THOMAS J. MULLIGAN
JOHN P. ST. JOHN
ROBERT V. THOMANN

December 15, 1969

To whom it may concern:

On December 5th, 1969, a field trip was conducted to assess the water quality in the lower region of the Passaic River. Hydroscience, Inc., Consultants In Water Pollution Control, were contacted to determine experimentally the parameters that are currently being used to evaluate the water quality of the lower Passaic River. Hydroscience, Inc., also agreed to comment, based on the results of the experiments, whether the Passaic River in the region of concern is meeting the water quality standards set by the New Jersey State Health Department.

Based on the results of chemical analyses and the overall condition of the river system as observed during the field trip, the water quality in the lower Passaic River does meet the standards of water quality which apply to that zone of the river. In fact, the water quality was judged to be acceptable for the next higher watercourse classification. By definition, these waters would have limited recreational value, but should be suitable for fish survival.

The New Jersey State Department of Health has established certain standards of qaulity to be maintained in the waters of the State. The standards that are assigned to a watercourse are determined by defining the best projected use of the watercourse in question. For example, the water quality standards assigned to a fresh water trout-bearing stream would be more stringent than those standards assigned to a tidal waterway whose primary use is navigation. The lower region of the Passaic River from Dundee Lake Dam to the northern end of Newark Bay has been classified by the New Jersey State Department of Health as a "TW-3" tidal waterway. The definition of the best use of a watercourse in this classification is a "...tidal surface water, used primarily for navigation, not recreation. These waters, although not expected to be used for fishing, shall provide for fish survival. These waters shall not be an odor nuisance, and shall not cause damage to pleasure craft traversing them". The minimum standards of water quality to be maintained to meet the TW-3 classification are listed below.

Item	Comment
1. Floating solids.	None which are noticeable in water or contribute to the formation of sludge deposits along the shore.
2. Settleable solids.	See number 1.
3. Sludge deposits.	Harmful sludge deposits are not permitted.
4. Solid Refuse, Garbage, Cinders, Ashes, Oils, Sludge or other refuse.	Not specified.
5. Sewage or other effluent(s).	Disinfection, if required by the State Department of Health.
6. Oil, grease, oil slicks and/or scum.	See number 1.
7. Coliform density.	None in such concentrations that would impair the waters for the assigned uses.
8. pH.	Between 6.5 and 8.5, unless naturally outside thereof.
9. Dissolved oxygen.	Not less than 30% of saturation, if such value is greater than 2.5 mg/l. Otherwise, not less than 2.5 mg/l.
10. Color.	Not specified.
11. Turbidity.	Not specified.
12. Taste, odor.	Taste and odor producing substances: none which shall be offensive or that would detrimentally affect finfish, shellfish, or other aquatic life in higher quality waters.
13. Toxic wastes, deleterious substances.	None in such concentrations as to cause fish mortality or inhibit their natural migration.
14. Heated effluents.	Not specified.
14(b). Temperature criteria; allowable temperature increase.	None that will have a detrimental affect upon the natural aquatic biota, or reasonably anticipated reuse of the waters.

Samples of the Passaic River were taken at eleven (11) locations. These sampling stations are shown in the accompanying general map of the area. The samples were analyzed to determine the concentration of chlorides, dissolved oxygen, pH, and biochemical oxygen demand (BOD).

The results of these analyses are shown in Table 1, which is appended.

In any watercourse, dissolved oxygen is necessary for the life of fish and other aquatic organisms. The saturation value of dissolved oxygen in water depends on temperature and dissolved salts. The dissolved oxygen saturation values were calculated from the temperature and chloride data collected during the December 5th field trip.

pH is a measure of the acidity-alkalinity relationship of a watercourse. The biochemical oxygen demand (BOD) is used as an indicator of the presence and strength of organic pollution.

To determine if the lower Passaic River meets the standards that apply, chemical analyses of river samples and physical observations of the river system are required. The results of the chemical analyses shown in Table 1 indicate that the lower Passaic River meets section numbers 8 and 9 of the standards. At no time during the field trip was the presence of oil slicks, grease, scum, floating or settleable solids observed in the river. At two locations, oil was observed in small quantities on the shore, but apparently did not contribute to the formation of sludge deposits. Odor determinations were also performed on the river samples. The samples appeared to be odor-free.

If there are any questions concerning this matter, please do not hesitate to contact the undersigned.

Respectfully submitted,

HYDROSCIENCE, INC.

Michael B. Denove

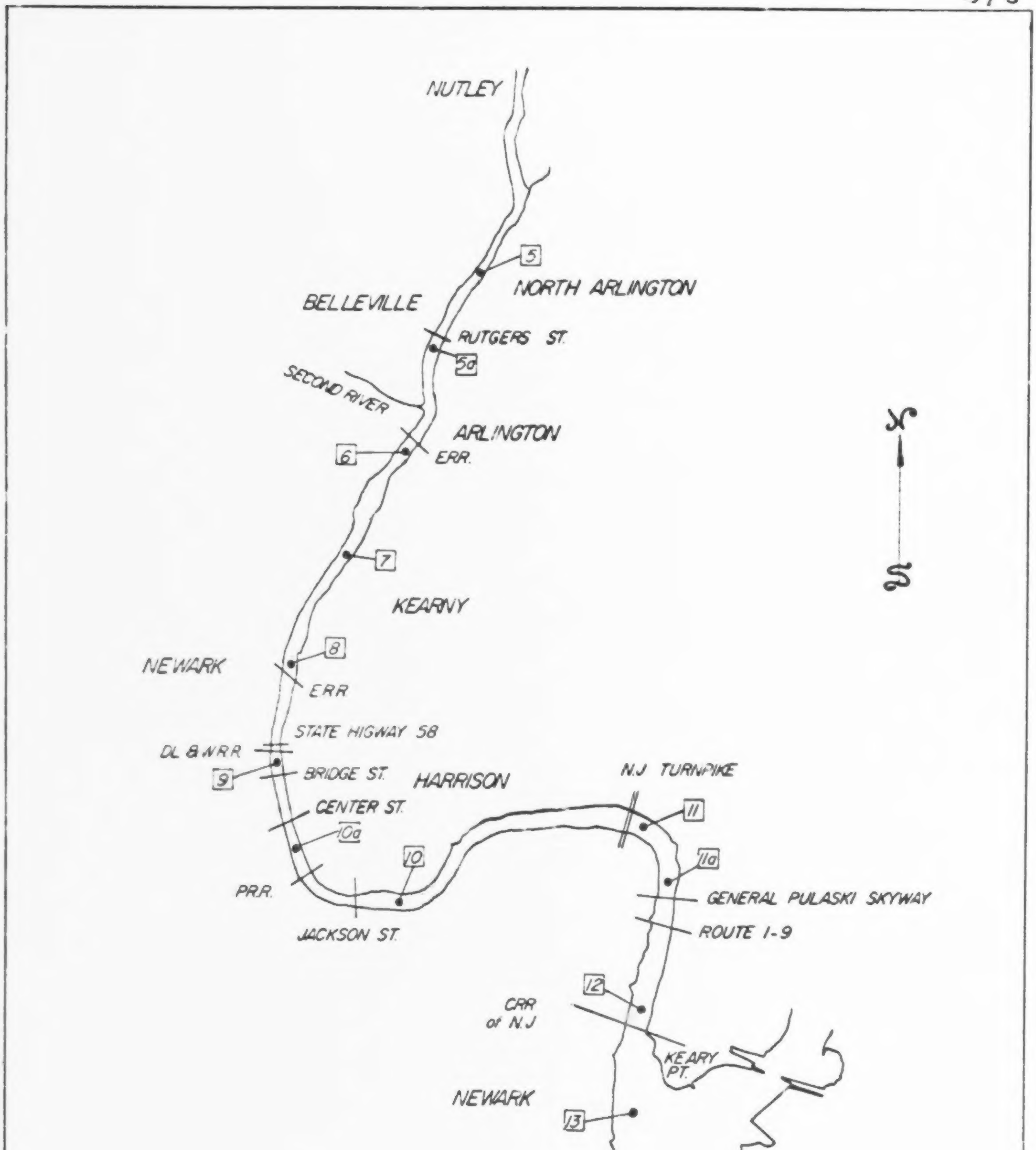
Michael B. Denove

MBD/lf
Attachment
cc: see attached list

TABLE 1

RESULTS OF ANALYSES ON PASSAIC RIVER SAMPLES

Station	Time of Sample	Temperature (° F)	Chlorides (mg/l)	pH	Saturation value of oxygen in water (mg/l)	Measured Dissolved Oxygen (mg/l)	% Saturation	BOD (mg/l)
5	1220	38.0	16.	7.6	13.5	10.9	80.8	5.7
5a	1227	37.5	13.	7.7	13.4	10.8	80.6	6.4
6	1238	37.0	54.	7.7	13.4	10.6	79.3	7.1
8	1154	38.0	112.	7.6	13.2	9.2	69.6	5.1
9	1250	39.0	274.	7.6	13.1	9.9	75.6	4.1
10a	1130	40.0	400.	7.6	12.9	7.5	58.1	4.0
10	1115	41.5	780.	7.2	12.6	8.5	67.5	5.9
11	1050	50.	1,200.	7.3	11.2	6.5	58.0	5.8
11a	1039	50.	1,280.	7.1	11.2	6.5	58.0	4.7
12	1032	46.5	1,380.	7.4	11.7	6.4	54.6	5.0
13	1010	46.5	900.	7.1	11.7	6.6	56.3	5.1


NUTLEY
5
NORTH ARLINGTON
BELLEVILLE
RUTGERS ST.
5a
SECOND RIVER
ARLINGTON
6
ERR.
7
KEARNY
8
NEWARK
ERR
STATE HIGWAY 58
DL & W.R.R.
9
BRIDGE ST.
HARRISON
CENTER ST.
10a
P.R.R.
10
JACKSON ST.
N.J TURNPIKE
11
11a
GENERAL PULASKI SKYWAY
ROUTE 1-9
12
CRR of N.J
KEARY PT.
NEWARK
13
NEWARK BAY
R N24
LV & P.R.R
NJ TURNPIKE EXTENSION
1.0
0.5
0
1.0
SCALE IN MILE
N
S

LOWER PASSAIC RIVER

U.S. GOVERNMENT PRINTING OFFICE : [illegible]